

UNIVERSITY OF THE PHILIPPINES MANILA  
COLLEGE OF ARTS AND SCIENCES  
DEPARTMENT OF PHYSICAL SCIENCES AND MATHEMATICS

INSTITUTE OF MOLECULAR BIOLOGY AND  
BIOTECHNOLOGY BIOBANK SPECIMEN SAMPLE  
MONITORING SYSTEM

A special problem in partial fulfillment  
of the requirements for the degree of  
**Bachelor of Science in Computer Science**

Submitted by:

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June 2015

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## ACCEPTANCE SHEET

The Special Problem entitled “Institute of Molecular Biology and Biotechnology Biobank Specimen Sample Monitoring System” prepared and submitted by Sheila Mae F. Jornadal in partial fulfillment of the requirements for the degree of Bachelor of Science in Computer Science has been examined and is recommended for acceptance.

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## **Abstract**

Managing large number of specimen samples used for their research projects is one of the huge burdens faced by many health institutions like the Institute of Molecular Biology and Biotechnology (IMBB) of the National Institute of Health (NIH) in the Philippines. As a solution for the specified problem, the study will propose a system that will help researchers to monitor all the access on each available samples and keep track of sample's amount and storage location inside a freezer. The monitoring system will be supported by a barcode scanning mechanism.

*Keywords:* samples, biobank, specimen, monitoring system, imbb

# Contents

<b>Acceptance Sheet</b>	<b>i</b>
<b>Abstract</b>	<b>ii</b>
<b>List of Figures</b>	<b>v</b>
<b>List of Tables</b>	<b>vii</b>
<b>I. Introduction</b>	<b>1</b>
A. Background of the Study . . . . .	1
B. Statement of the Problem . . . . .	3
C. Objectives of the Study . . . . .	3
D. Significance of the Project . . . . .	5
E. Scope and Limitations . . . . .	5
F. Assumptions . . . . .	5
<b>II. Review of Related Literature</b>	<b>7</b>
<b>III. Theoretical Framework</b>	<b>11</b>
A. Medical Research . . . . .	11
B. Specimen . . . . .	11
C. Biobank . . . . .	12
D. NIH Institute of Molecular Biology and Biotechnology . . . . .	13
E. Database Management System . . . . .	14
F. Information System . . . . .	15
G. Barcode . . . . .	15
<b>IV. Design and Implementation</b>	<b>18</b>
A. Use Cases . . . . .	18
B. Database Design . . . . .	21
C. System Architecture . . . . .	26

D. Technical Architecture . . . . .	26
<b>V. Results</b>	<b>28</b>
<b>VI. Discussions</b>	<b>47</b>
<b>VII. Conclusions</b>	<b>49</b>
<b>VIII. Recommendations</b>	<b>50</b>
<b>IX. Bibliography</b>	<b>51</b>
<b>X. Appendix</b>	<b>55</b>
A. Source Code . . . . .	55
<b>XI. Acknowledgement</b>	<b>111</b>

# List of Figures

1	Freezer-Rack-Box Hierarchy . . . . .	14
2	One-Dimensional and Two-Dimensional Barcode . . . . .	16
3	Top-level Use Case Diagram . . . . .	18
4	Manage User Accounts Use Case Diagram . . . . .	19
5	Manage Project Data Use Case Diagram . . . . .	19
6	Manage Specimen Sample Data Use Case Diagram . . . . .	20
7	Entity-Relationship Diagram . . . . .	21
8	System Architecture . . . . .	26
9	Login Page . . . . .	28
10	Login Page with warning message . . . . .	28
11	Home Page of System Administrator . . . . .	29
12	Side-bar Menu Options for System Administrator . . . . .	29
13	Home Page of Project Head and Researcher . . . . .	30
14	Side-bar Menu Options for Project Head . . . . .	30
15	Side-bar Menu Options for Researcher . . . . .	31
16	New Project Page . . . . .	31
17	New Project Confirmation Modal . . . . .	32
18	New Project Success Message . . . . .	32
19	Project List Page . . . . .	32
20	Edit Project Page . . . . .	33
21	Edit Project Confirmation Modal . . . . .	33
22	Edit Project Success Message . . . . .	34
23	About Project Page . . . . .	34
24	Update Project Page . . . . .	35
25	Update Project Confirmation Modal . . . . .	35
26	Update Project Success Message . . . . .	35
27	New Specimen Sample Page . . . . .	36
28	New Specimen Sample Confirmation Modal . . . . .	36

29	New Specimen Sample Success Message . . . . .	36
30	Specimen Sample List Page . . . . .	37
31	Edit Page - Specimen Sample Information . . . . .	37
32	Edit Page - Source Information . . . . .	38
33	Edit Page - Test Information . . . . .	38
34	Edit Page - Location Information . . . . .	38
35	Edit Specimen Sample Confirmation Modal . . . . .	39
36	Edit Specimen Sample Success Message . . . . .	39
37	Specimen Sample Access Page . . . . .	39
38	Specimen Sample Access Confirmation Modal . . . . .	40
39	Specimen Sample Access Success Message . . . . .	40
40	Specimen Sample Access Logs Page . . . . .	40
41	Specimen Sample Reports Page . . . . .	41
42	Specimen Sample Report in PDF format . . . . .	41
43	New User Page . . . . .	42
44	New User Confirmation Modal . . . . .	42
45	New User Success Message . . . . .	43
46	User List Page . . . . .	43
47	User List Page with deactivated user . . . . .	43
48	Audit Trail Page . . . . .	44
49	User Profile Page . . . . .	45
50	Edit User Profile Page . . . . .	45
51	Edit User Profile Confirmation Modal . . . . .	46
52	Edit User Profile Success Message . . . . .	46
53	Sign Out . . . . .	46

## List of Tables

1	user table . . . . .	22
2	user_type table . . . . .	22
3	project table . . . . .	22
4	user_profile table . . . . .	23
5	project_has_sample table . . . . .	23
6	sample table . . . . .	23
7	source table . . . . .	23
8	specimen_type table . . . . .	23
9	test table . . . . .	23
10	sample_has_test table . . . . .	24
11	slot table . . . . .	24
12	box table . . . . .	24
13	level table . . . . .	24
14	rack table . . . . .	24
15	shelf table . . . . .	24
16	freezer table . . . . .	25
17	system_log table . . . . .	25

# I. Introduction

## A. Background of the Study

Nowadays, health problems are the common burden faced by many people. There are a lot of them who are suffering from different kinds of common and life-threatening diseases like cancer, diabetes, heart disease, etc. As a solution, a field called medical research aims to prevent, cure, and lessen the impact of such illnesses by providing substantial information and insights about the disease's nature. Researchers, who perform the medical research, undergo many procedures in investigating the probable cause and potential treatment for the diseases. One of these procedures include the thorough examination and observation on the different types of sample materials called biospecimens, or simply specimens, which are usually derived from different sources.

Specimen is a term for a biological material which may be a serum, fecal, sputum, tissue, blood, urine, saliva, cell, protein, ribonucleic acid (RNA), deoxyribonucleic acid (DNA), and plasma used in medical research. It is acquired from different sources including animals, but usually from human [1]. This material is very significant in the diagnosis and analysis of diseases. Researchers, upon performing correctly all the defined tests on a specific specimen, will be able to extract vital information that will aid in the analysis and prevention of a certain illness. Thus, it is very important to protect the integrity and quality of these biological materials as well as the data related to each of it within a secured location known as biobank.

Biobank covers collection of specimens from animals and humans. It accepts, processes, stores, and distributes specimens and their associated data for the benefit of research and clinical care. Organizations like the International Society for Biological and Environmental Repositories (ISBER) provide certain guidelines for standard operating procedures to create and operate a biobank [2]. Today, there exist a large number of biobanks developed in several countries in order to collect,

analyze, and store phenotypic and genetic information on sample specimens [3].

The Institute of Molecular Biology and Biotechnology (IMBB) is one of the many institutions that performs biobanking. IMBB, also called Biotech-Manila, is an institution under the National Institute of Health (NIH) that helps in the analysis and diagnosis of diseases such as dengue, tuberculosis, influenza, and others. IMBB is conducting advanced medical and health-related biotechnology researches in coordination with the Department of Science and Technology (DOST) and University of the Philippines (UP). Its researches are more focused on the top 10 causes of morbidity and mortality in the Philippines [4].

In line with this, researchers working in IMBB collect and handle many specimens of different types such as whole blood, serum, plasma, stool, tissue, cell culture, microbial culture, urine, cerebrospinal fluid, and others that are necessary and relevant for the projects that they handle and implement. These specimens are obtained from different participants, usually patients, from different hospitals or institutions who completely achieve the requirements for a certain project.

Upon the completion of procedures such as collection and initial processing, the specimen samples are required to be stored inside a storage container like a freezer located inside their laboratory to preserve their quality and integrity for further testing and examination. They follow the freezer-rack-box hierarchy in storing the specimen samples inside a particular freezer.

With the development and application of information technology (IT) solutions, the value of biobanks for research raises and makes them more accessible. It meets the societal demand for better health care through improved therapies and medications as a result of medical research [5]. Laboratory Information Management System (LIMS) is an example of a widely used software in managing and tracking samples in clinical laboratories [6].

## **B. Statement of the Problem**

With the collection of a huge number of specimen samples of different types obtained from different patients, IMBB biobank is experiencing some problems in handling these significant materials. Such burdens include inability to monitor the available or current amount of each specimen samples dedicated under one or many projects, inability to monitor all the specimen sample access of each researchers, and time-consuming searches for specimen samples to be retrieved from the freezer. This is due to the absence of a standard system that will keep track and monitor each specimen samples under each research projects.

## **C. Objectives of the Study**

The study aims to develop a monitoring system that will store specimen sample's information, keep track of their storage location, and monitor specimen sample access inside the institute.

The specimen sample monitoring system features the following:

1. Allows the researcher to:
  - (a) View his/her user account
  - (b) Update his/her user account
  - (c) View list of his/her research projects
  - (d) View research project information
  - (e) View list of specimen sample records in his/her research projects
  - (f) Search specimen sample in his/her research projects through search bar
  - (g) Update test information part on the specimen sample record in his/her research projects
  - (h) Log access of specimen sample in his/her research projects through barcode scanner or manual input
    - volume obtained from the specimen sample

- test to be performed on the specimen sample
- specimen sample barcode

2. Allows the project head to:

- (a) Function as a researcher
- (b) Update research project information
- (c) Add specimen sample records in his/her research projects
  - basic information
  - source information
  - location information
- (d) Update specimen sample record in his/her research projects
- (e) View access logs on specimen samples in his/her research project
- (f) View statistical reports about the specimen samples of his/her particular research project

3. Allows the system administrator to:

- (a) Manage user accounts
  - Add user accounts
  - Activate/Deactivate user accounts
- (b) View list of user accounts
- (c) Manage research projects
  - Add new research project
  - Update research project
  - Assign project head and researchers on research projects
- (d) View list of research projects
- (e) View system logs (audit trails)
  - date and time of the log

- user who performed the log
- details of the log

## D. Significance of the Project

The availability of the proposed system will be beneficial for the researchers of the Institute of Molecular Biology and Biotechnology. The system will enable them to monitor the available and current amount of all the specimen samples of each project as well as the access of all the researchers on the specimen sample. It will also lessen the time-consuming searches of specimen in the freezers that may lead to specimen sample degradation.

## E. Scope and Limitations

The following are the scope and limitations of the system:

1. The proposed system is designed only to be used by researchers of the IMBB.
2. The proposed system is bound by existing processes and requirements of the IMBB and sample data confidentiality guidelines.
3. The proposed system does not include the process of obtaining samples from patients.
4. The researchers and project heads are allowed to view records of specimen samples only within the project that they handle.
5. The project head can view the statistical reports and specimen sample access logs only within the project that they handle.

## F. Assumptions

The following are the preliminary assumptions of the system:

1. All the research projects are approved by the Ethics Committee of IMBB.

2. All the specimen samples in each research projects are supported by patient consent and other documents required by the Ethics Committee of IMBB.
3. All data inputs provided by different users are of correct values, formats, and/or data types.
4. The size of the box, rack level, rack, and shelves are fix to accommodate the current setup in IMBB.
5. A specimen sample can be shared between multiple projects if their project head is the same person.
6. There is only one project head for each projects.
7. A numeric naming convention is used in naming the boxes, rack levels, racks, and shelves.

## II. Review of Related Literature

Establishment of large-scale biobanks of human specimens is essential to medical studies. In order to facilitate these long-term studies within a biobank, a reliable system that manages sample is necessary to avoid problems in biobanking such as sample mix up as well as sample loss [6]. In line with this, there are some existing literatures and academic papers that discuss different system used to search, track, and manage samples in different biobanks.

Gostev et. al. [7] designed a web-based application called Sample Availability System (SAIL). The system is mainly use for searching, browsing, and annotating collections of biospecimens. As a central platform, SAIL helps the researchers to integrate their resources and quickly search sample availability.

Gavrielides et. al. [8] presented a platform-independent web-based laboratory information management system for sample and analysis tracking particularly for oncogenomic experiments. Sample information including sample name, sample type, site and histology, and surgery information are submitted to a database. Other information like metadata of the samples such as the date a sample was submitted to the database, last time they were modified, the user who created the sample, and all the users who have edited the sample, and others that are related to the sample experiments are also stored in the database. Each user of the system can list all the samples under a certain project by navigating the project page. They can also search samples through the search form by entering the main attributes of the sample: name, type, site, histology, user who submitted the sample.

Rossum et. al. [9] presented a web application called Sample-based Laboratory Information Management System (SLIMS). It provides researchers and other members of a laboratory with an interface that enables them to view, edit, and add sample information. The system's general features include subject management, sample management, container management, data browsing and searching, etc. SLIMS also contains input validation and user-based editing privileges. It is

also able to produce reports about the subjects and samples. This management system was based on PASSIM [10], a previously published LIMS.

Originally developed for the Translational Research Investigating Biomarker Endpoints in Acute Kidney Injury (TRIBE-AKI) consortium, Nadkarni et. al. [2] designed a biospecimen data management system (BDMS). The system is used to facilitate the workflow of biospecimen collection and analysis. It has a functionality that generates barcode labels for each aliquot container according to the template being designed. Aside from the machine-generated barcode with a check-digit, identifying informations such as patient id, collection date, protocol id, and specimen type can also be included in the label. In addition, the system is also capable of assigning storage location for each specimens, identifying location of a certain specimen, and tracking of sample consumptions. This BDMS communicates with another system, a clinical research information system (CRIS), which is the one responsible for other related processes like specimen consent management.

Norling et. al. [11] designed and proposed a web-based monitoring system of a biobank. The system is able to record the movement of samples inside and outside the biobank and keep track of the opening and closing of freezers. In order to ensure security and integrity of the samples, the system is incorporated with an early warning feature that send alerts via short message service (SMS) or email whenever a record of any measurement exceeds its acceptable limits. Technologies such as python, perl, and php are used to develop the system.

In order to support complex data management needs of biobanks, Dowst et. al. [12] developed a web-based modular system called Acquire. It mainly supports all the major requirements particular for a cancer biobank. Some of its several features include freezer and container management, specimen annotation, and comprehensive reporting and dashboards.

Voegele et. al. [13] developed a three-tier system that enables the monitoring of samples and their position in the hierarchy of containers: liquid nitrogen tanks, freezers, fridges, and dedicated humidity-controlled rooms. The system is also

able to record the history of each sample's movement from retrieval to extraction. Its main features include data insertion through forms or importing pre-formatted csv files, query informations, generate tables, excel files or other types of reports, record sample or container movement, automatic and instant barcode printing, and automatic sending of emails to person-in-charge in case of errors or problems. Technologies such as Oracle database, Oracle forms builder, and Oracle JInitiator plug-in are used to develop the system. Two servers are used in the system: one Linux server and one Windows 2003 application server.

Most of the previously mentioned works used barcode as a unique identifier of a certain sample. But aside from barcode usage, some specimen management systems also take advantage of the new arising technologies like the Radio Frequency Identification (RFID). RFID is a method that allows a system to remotely store and retrieve data using magnetic induction reader and tags [14].

One specimen system proposed by Shim et. al. [14] used RFID technology composed of materials such as radio frequency band reader, a writer for information input and output, an antenna used to facilitate communication between data, and the tag or transponder used to store and save data. Another system that used RFID is the Sample Identification and Tracking System (SITS) designed by Zarabzadeh et. al. [6]. This system is being prototyped in the Prostate Cancer Research Consortium (PCRC) biobank. It has functionalities to identify samples, track samples longitudinal, search samples and aliquots based on attributes, and other administrative functions. Aside from RFID, the system was also based on other technologies such as VB programming language, ASP and AJAX, and Microsoft JET database.

The use of RFID utilizes specimen system. On the other hand, since RFID technology is based on radio waves penetration, there are incidences that its behavior become strange and unpredictable especially when it is near a liquid or metal at certain frequencies. Aside from it, another drawback of using RFID systems is that it is more expensive than barcode systems [15]. It is mainly the reason

why institutes do not adapt this kind of implementation.

Moreover, solutions like commercial softwares that manage daily repository operations and biobank inventory are also available.

According to Dash et. al. [16], numerous number of software vendors are specializing in the field of laboratory information management, particularly in biorepository operations. Some of these entrepreneurs include LabVantage<sup>1</sup>, Thermo Scientific<sup>2</sup>, StarLIMS<sup>3</sup>, HealthCare IT, Inc.<sup>4</sup>, and Information Management Services Inc.<sup>5</sup>. Their products are mostly software systems with capabilities focused on biospecimen tracking, specimen inventory management, clinical data annotation, etc. Other extra features and modules are also available but they usually come at additional costs. For example, LabVantage charges an amount of 87, 954.75 USD as a fee to enable a certain feature called "Advanced Storage and Logistics" in using their software. Moreover, StarLIMS charges 9, 571.25 USD per user to acquire an access on the basic edition of their document management module, 9, 571.25 USD for their batch processing feature, and 33, 499.38 USD for their Web services framework. Such costs including license fees restrict most laboratories to adapt these commercial softwares. Although one can expect a quicker and smoother integration when choosing these commercially available software systems, high support and maintenance costs serves as a prohibiting factor [17].

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<sup>1</sup><http://www.labvantage.com/>

<sup>2</sup><http://www.thermoscientific.com/en/home.html>

<sup>3</sup><http://www.starlims.com/en-us/home/>

<sup>4</sup><http://www.healthcit.com/>

<sup>5</sup><http://www.bsismystems.com/>

### **III. Theoretical Framework**

#### **A. Medical Research**

Medical research, also called research study, is a term defined as an organized process of obtaining more knowledge about health in general.[18]. This field is important because it helps to improve the health of people worldwide through the discovery of new and better ways to prevent and treat diseases. It also leads to acquire advance knowledge for the good of society [19]. According to Zerhouni [20], medical research is similar to a detective story that always search for new leads to follow.

#### **B. Specimen**

According to a guide provided by the University of California, San Francisco (UCSF) [21], the term specimen is described as a widely used collection of materials that encompasses a full range of human specimen types such as:

- Sub-cellular components: DNA or RNA
- Cells or tissues from any part of the human body
- Organs: liver, bladder, kidney, heart, placenta, etc.
- Gametes: ova and sperm
- Embryos and fetal tissues
- Bodily products: teeth, hair, nail clippings, sweat, urine, feces
- Blood and blood fractions: plasma, serum, buffy coat, red blood cells
- Saliva and buccal cells
- Others

Among these sample materials, the most common types that are usually archived are tissues. These materials include blood, saliva, hair, nails, epithelia, soft tissues, urine, and other body fluids [22].

Specimens are significant help in the diagnosis and classification of disease processes. Each of them is studied to specifically predict responses to therapy, select effective therapy, identify underlying risks for adverse events, and predict outcomes. The quality of biospecimens, whatever type it is, significantly impacts the quality of test results that may be obtained [16].

### C. Biobank

Biobank is defined as a long-term storage and conservation facility of biological specimens with its associated clinical or experimental data to support various scientific investigation [23].

A biobank is made up of two different parts:

- biologic material
- database

Biologic materials are large number of specimens that undergo procedures such as collection, processing and long-time storage within a container like freezers. It may include serum, DNA, RNA, fecal, sputum, and others.

On the other hand, the database contains important information about the demographic and clinical data for each sample and other associated data. It contains data describing the collected items: the type of the material and the details of obtaining, preserving and storage condition. Moreover, it is where they store information derived from the items: pathological findings, biochemical analysis, and the like. They also store or link data associated with the items like the donor, medical case history, and therapies usually supplied from the donors questionnaire [5].

There are several types of biobanks classified according to their purpose and reason. Such biobank types include:

- disease-oriented biobank
- population-based biobank
- case-control biobank
- tissue biobank
- biobanking within clinical trial
- biobanks for cells

Nowadays, biobank is considered a vital tool on the development and implementation of diagnostics and treatment research [24].

#### **D. NIH Institute of Molecular Biology and Biotechnology**

The Institute of Molecular Biology and Biotechnology (IMBB) is one of the 10 institutes working under the National Institute of Health (NIH) in the Philippines. It was created in September 29, 1994 through the effort of the UP Board of Regents; aiming to promote and implement quality research particularly focused on diseases which are considered as the major causes of mortality and morbidity in the country. IMBB, also called Biotech-Manila, is partnered and supported by the DOST and UP to provide medical and health-related biotechnology researches and projects such as molecular diagnostic program, dengue program, tuberculosis program, avian IgY Technology for infectious disease diagnostics and therapeutics, immunonutraceutical research and biosurveillance program [4].

In order to acquire better research process and results, IMBB establishes biobanking in their facility. They handle thousands of collective specimen samples of different types necessary for each of their projects. These samples are usually obtained from the patients with their approval of using their biospecimens for a

certain research purpose. This approval is documented through a patient consent form provided by the researchers.



Figure 1: Freezer-Rack-Box Hierarchy

After a successful process of collecting and initial processing of each samples which are stored in a 1.5ml tube, their data will be recorded manually in a log book. After the record has been completed and all the necessary informations are logged, the samples will then be placed in one of the cell of a 9x9 box. This box will be placed in one of the level inside a 4x4 rack which is located in a -80 degrees celsius freezer. The samples will be kept inside the container until it will be used for further testing and examination to be conducted by the researchers. Figure 1 shows an example of each storage location of a biospecimen sample, such as tube<sup>6</sup>, box<sup>7</sup>, rack<sup>8</sup>, and freezer<sup>9</sup>.

## E. Database Management System

A database management system (DBMS) is a software designed to assist in maintaining and utilizing large collections of data. It is composed of programs that enable users to store, modify, and extract information from a database [25] and

<sup>6</sup><http://www.bio-equip.cn/eWebEditor%5CUploadFile%5C13427.jpg>

<sup>7</sup><https://i1.ytimg.com/vi/AGPTOZ2IZEM/hqdefault.jpg>

<sup>8</sup><http://www.thermoscientific.com/content/dam/tfs/LPG/LED/LED%20Product%20Images/Cold%20Storage/Ultra%20low%20Temperature%20Freezers/Racks%20for%20Matrix%20and%20Nunc%20Tubes/CS-Tube%20rack%204%20inner%20door%2017-23%20CF.jpg/jcr:content/renditions/cq5dam.thumbnail.450.450.png>

<sup>9</sup><http://news.thermofisher.com/sites/thermofisher.newshq.businesswire.com/files/CS-HFU500-quarterview.jpg>

ensures accuracy and consistency among different records. Using a DBMS in managing data has many advantages: data independence, efficient data access, data integrity and security, data administration, concurrent access and crash recovery, and reduced application development times [26].

One of the most widely used DBMS is the relational DBMS where data are organized in tables that are flexible to access data in different ways [9]. Some frequently used DBMS examples include MySQL, PostgreSQL, Microsoft Access, SQL Server, and Oracle [27].

## F. Information System

An information system (IS) is defined as an integrated set of components for collecting, storing, and processing data. It is used to deliver information and knowledge, as well as to carry out and manage different types of business operations within organizations [28].

IS is widely used in the different sectors including the health sector because it has a great potential of reducing health care cost while improving outcomes and operations such as decision-making, epidemiologic surveillance, health outcomes assessment, program administration, public health planning, and policy analysis [29][30].

## G. Barcode

A barcode, described as an "optical Morse code" [31], is a code made up of a group of printed and variously patterned bars and spaces. It contains information (as identification) about the object it labels and designed to be scanned and read into the memory of a computer [32]. It is primarily used to uniquely identify items and also to provide traceability, inventory control, and verification.

As a graphic representation of data, barcode is read using an optical machine [33] called barcode scanner. The scanner measures the lights being reflected and translates the code into combination of numbers and letters. These combinations

are then passed on the computer.

Barcodes are classified based on two categories: 1D (linear) and 2D.

Linear barcode are read using a laser scanner. It can be further subclassified into two categories:

1. Continuous or Discrete: In continuous symbologies, one character ends with a space and the next beginning with a bar, or vice versa; whereas in discrete, character starts and ends with bars;
2. 2-widths or Many-widths: In 2-width symbologies, bars and spaces are wide and narrow; whereas in many-width symbologies, the bars and spaces are multiples of the basic width.

On the other hand, 2D barcodes have to be scanned by an image-based scanner using a CCD or other digital camera sensor technology like smartphones.

The figure below shows an example of a linear barcode<sup>10</sup> and a 2-dimensional barcode<sup>11</sup> respectively.



Figure 2: One-Dimensional and Two-Dimensional Barcode

Barcode does not hold descriptive data because it only serves a reference used to look up an associated record with its important data and information. Symbol-ology, the mapping between messages and barcodes, enables the information to be read when a barcode is scanned and helps a printer understand the information to be translated into a label. Numerous systems of encoding data or symbologies [34] are available such as UPC/EAN, Interleaved 2 of 5 (I of 5), Codabar, Code 39, and Code 128.

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<sup>10</sup>[https://kungsirikarn.files.wordpress.com/2008/08/1d-barcode\\_n.png](https://kungsirikarn.files.wordpress.com/2008/08/1d-barcode_n.png)

<sup>11</sup><http://optional.is/required/wp-content/uploads/2009/06/barcode-qr.png>

The concept of barcoding was introduced to health care because it enables quick and accurate data entry as well as proper sample identification. Some of its important advantages include:

- enhanced accuracy (eliminates error in manual entry)
- reduced effort (automation)
- facilitated decision (decision-making can be based on real time data)

## IV. Design and Implementation

### A. Use Cases

The figure below is the top-level use case diagram of the IMBB Biobank Specimen Sample Monitoring System.

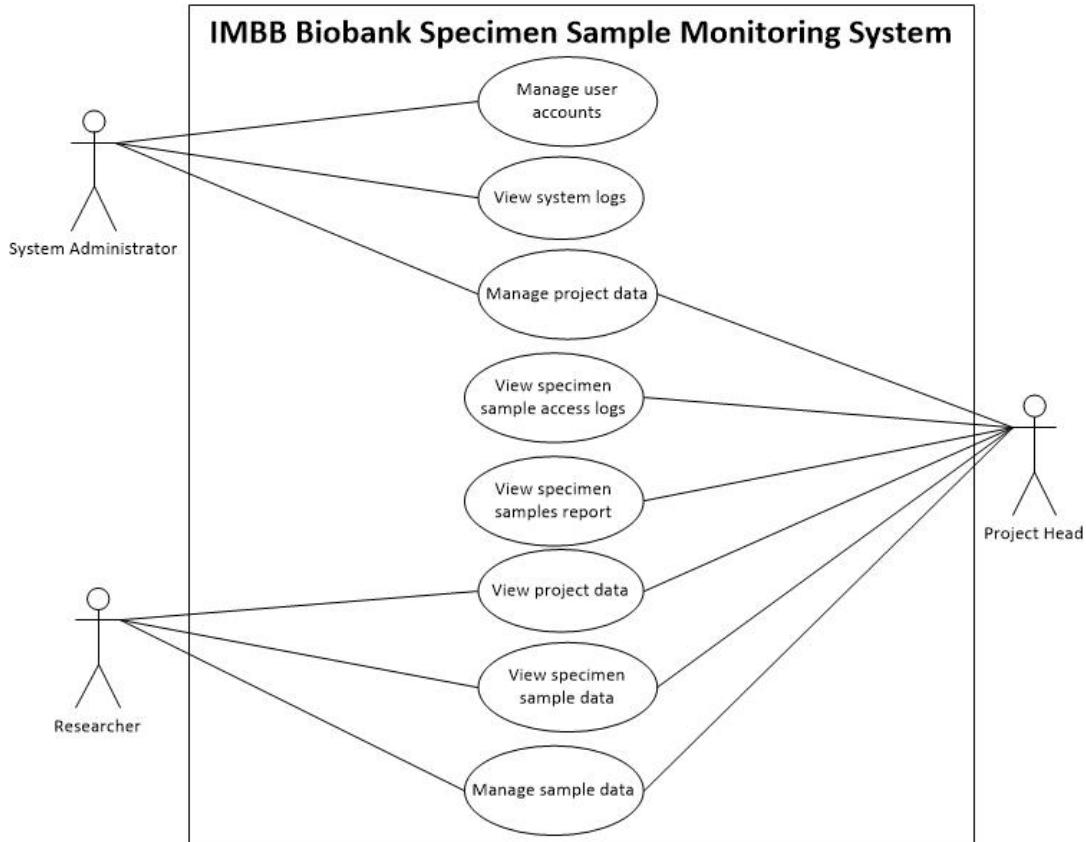


Figure 3: Top-level Use Case Diagram

The system consists of three users: the system administrator, the project head, and the researcher.

The system administrator will manage the users, add projects, assign user to its project, and view system logs; the project head will update information about the project he/she handles, add sample and assign it to its corresponding location, view sample logs, view specimen sample reports and perform as a researcher; the researcher will update the specimen sample information.

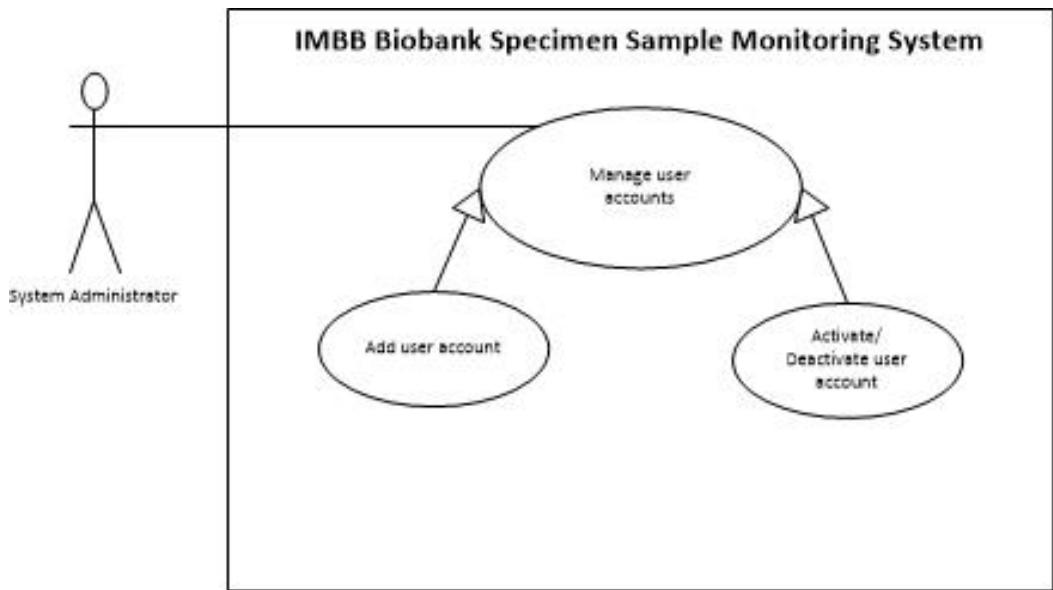


Figure 4: Manage User Accounts Use Case Diagram

Managing users requires adding, activating, and deactivating user accounts. These tasks are performed by the system administrator.

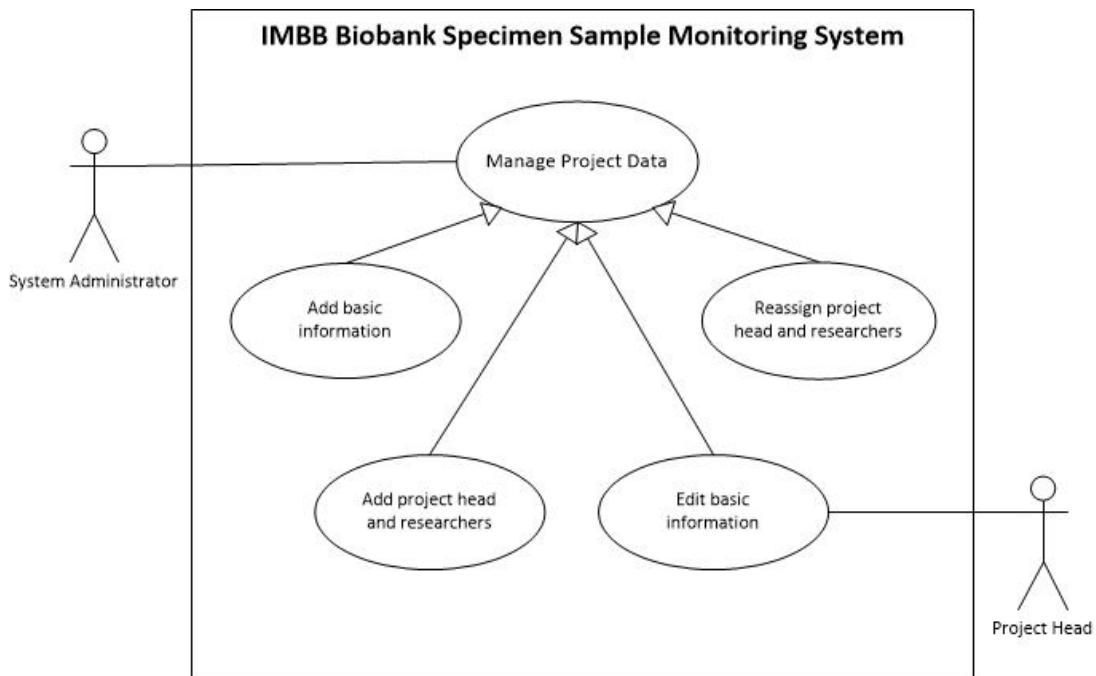


Figure 5: Manage Project Data Use Case Diagram

Managing project data requires adding and updating basic information and assigning project head and researchers of the project. This is performed by the

system administrator. On the other hand, the project head can only update the basic information of the project.

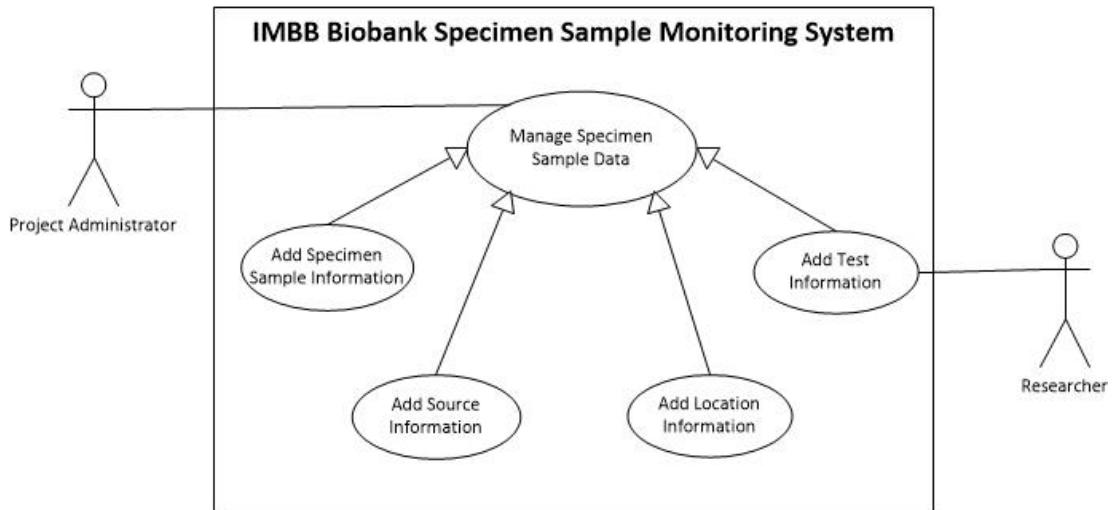


Figure 6: Manage Specimen Sample Data Use Case Diagram

Managing specimen sample requires adding specimen sample information, source information, location information, and test information. All this information can be updated by the project head. On the other hand, the researcher can only add test information of the specimen sample.

## B. Database Design

The figure below is the entity-relationship diagram of the IMBB Biobank Specimen Sample Monitoring System.

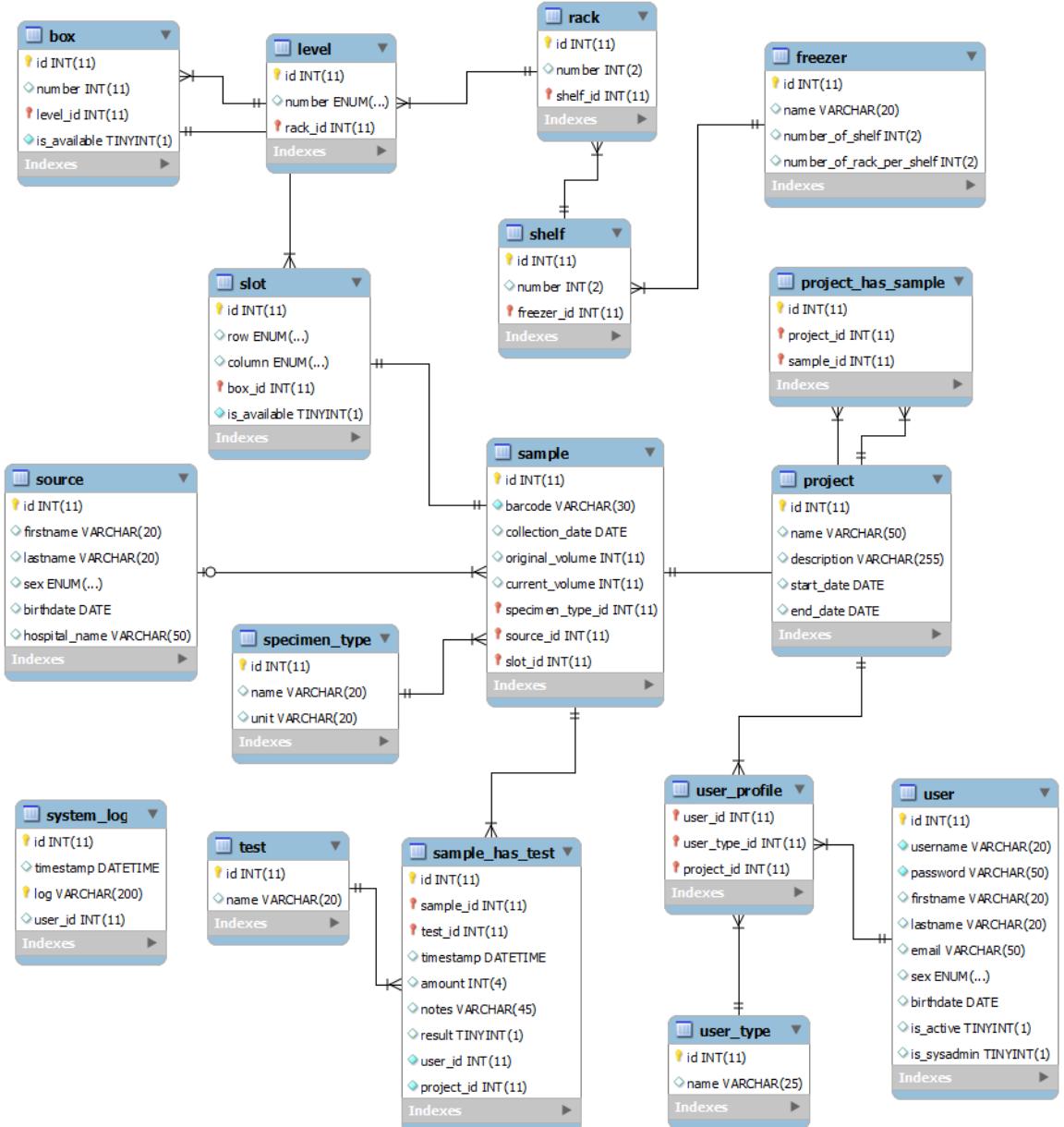


Figure 7: Entity-Relationship Diagram

The following tables describe the columns of each tables in the entity-relationship diagram (ERD) of the IMBB Biobank Specimen Sample Monitoring System.

Table 1: user table

Attribute	Data Type	Description
id	int(11)	unique id of the user
username	varchar(20)	username of the user
password	varchar(50)	password of the user
firstname	varchar(20)	first name of the user
lastname	varchar(20)	last name of the user
email	varchar(50)	email of the user
sex	enum('female', 'male')	sex of the user
birthdate	date	date of birth of the user
is_active	tinyint(1)	determines if the user is active
is_sysadmin	tinyint(1)	determines if the user is a system admin

Table 2: user\_type table

Attribute	Data Type	Description
id	int(11)	unique id of the user type
name	varchar(25)	name of the user type

Table 3: project table

Attribute	Data Type	Description
id	int(11)	unique id
name	varchar(50)	name of the project
description	varchar(255)	brief description of the project
start_date	date	date when the project will start
end_date	date	date when the project will end

Table 4: user\_profile table

Attribute	Data Type	Description
user_id	int(11)	unique id of the user
user_type_id	int(11)	unique id of the user type
project_id	int(11)	unique id of the project

Table 5: project\_has\_sample table

Attribute	Data Type	Description
id	int(11)	unique id of the user profile
project_id	int(11)	unique id of the project
sample_id	int(11)	unique id of the sample

Table 6: sample table

Attribute	Data Type	Description
id	int(11)	unique id of the sample
barcode	varchar(30)	barcode assigned to the sample
collection_date	date	collection date of the sample
original_volume	int(11)	original volume of the sample
current_volume	int(11)	current volume of the sample
specimen_type_id	int(11)	unique id of the specimen type
source_id	int(11)	unique id of the source
slot_id	int(11)	unique id of the slot where the sample is located

Table 7: source table

Attribute	Data Type	Description
id	int(11)	unique id of the source
first_name	varchar(20)	first name of the source
last_name	varchar(20)	last name of the source
sex	enum('female', 'male')	sex of the source
birthdate	date	date of birth of the source
hospital_name	varchar(50)	hospital name of the source

Table 8: specimen\_type table

Attribute	Data Type	Description
id	int(11)	unique id of the specimen type
name	varchar(20)	name of the specimen type
unit	varchar(20)	unit of measure of the specimen type

Table 9: test table

Attribute	Data Type	Description
id	int(11)	unique id of the test done with the sample
name	varchar(20)	name of the test done with the sample

Table 10: sample\_has\_test table

Attribute	Data Type	Description
id	int(11)	unique id of the particular test done with the sample
sample_id	int(11)	unique id of the sample
test_id	int(11)	unique id of the test done with the sample
timestamp	datetime	date and time the sample is use for testing
amount	int(4)	amount of sample used in the test
notes	varchar(45)	notes for the test
result	tinyint(1)	result of the test
user_id	int(11)	unique id of the user who obtained the sample
project_id	int(11)	unique id of the project where the sample is used

Table 11: slot table

Attribute	Data Type	Description
id	int(11)	unique id of the slot
row	enum('A','B','C','D','E','F','G','H','I')	row of the slot
column	enum('1','2','3','4','5','6','7','8','9')	column of the slot
box_id	int(11)	unique id of the box
is_available	tinyint(1)	determine if slot is available or not

Table 12: box table

Attribute	Data Type	Description
id	int(11)	unique id of the box
number	int(11)	number of the box
level_id	int(11)	unique id of the level containing the box
is_available	tinyint(1)	determine whether the box is still available or not

Table 13: level table

Attribute	Data Type	Description
id	int(11)	unique id of the rack level
number	int(11)	number of the rack level
rack_id	int(11)	unique id of the rack containing the level

Table 14: rack table

Attribute	Data Type	Description
id	int(11)	unique id of the rack
number	int(11)	number of the rack
shelf_id	int(11)	unique id of the shelf containing the rack

Table 15: shelf table

Attribute	Data Type	Description
id	int(11)	unique id of the shelf
number	int(11)	number of the shelf
freezer_id	int(11)	unique id of the freezer containing the shelf

Table 16: freezer table

Attribute	Data Type	Description
id	int(11)	unique id of the freezer
name	varchar(20)	name of the freezer
number_of_shelf	int(2)	number of shelves that the freezer contains
number_of_rack_shelf	int(2)	number of racks of each shelves of the freezer

Table 17: system\_log table

Attribute	Data Type	Description
id	int(11)	unique id of the system log
timestamp	datetime	date and time of the system log
log	varchar(200)	event of the system log
user_id	int(11)	unique id of the user who made the system log

## C. System Architecture

The specimen sample monitoring system has been implemented in PHP using Codeigniter as its framework. Codeigniter makes use of the Model-View-Controller setup. The system view uses HTML, Bootstrap, CSS, jQuery, and javascript to render the user interface which is visible and used to interact with the user. The system model uses functions that handle queries to MySQL database. The system controller defines the web-based application behavior. The figure<sup>12</sup> below shows the architecture of the system.

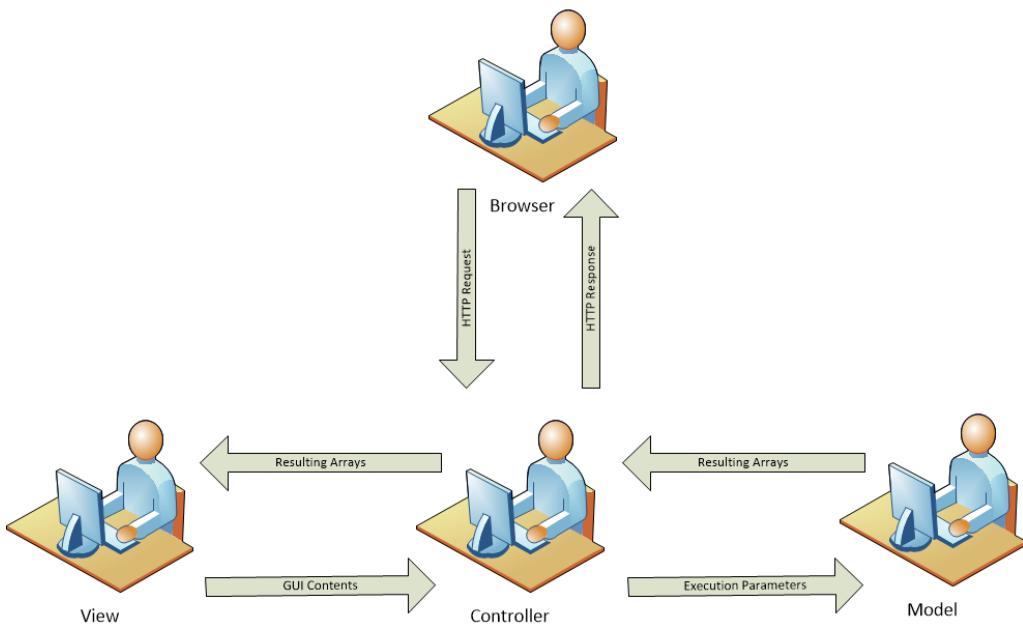


Figure 8: System Architecture

## D. Technical Architecture

The minimum requirements for the server machine include:

- PHP Server (Apache 2.2.22)
- MySQL 5.1.41
- 1GB or more of free space.

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<sup>12</sup><https://psychopathya.files.wordpress.com/2010/02/mvc.jpg>

- 2.4 MHz single core processor
- 512MB RAM

The minimum requirements for the client include:

- 1GB RAM
- Consistent Internet connection
- PDF Viewer
- 1D Barcode Scanner

## V. Results

### 1. Login Page

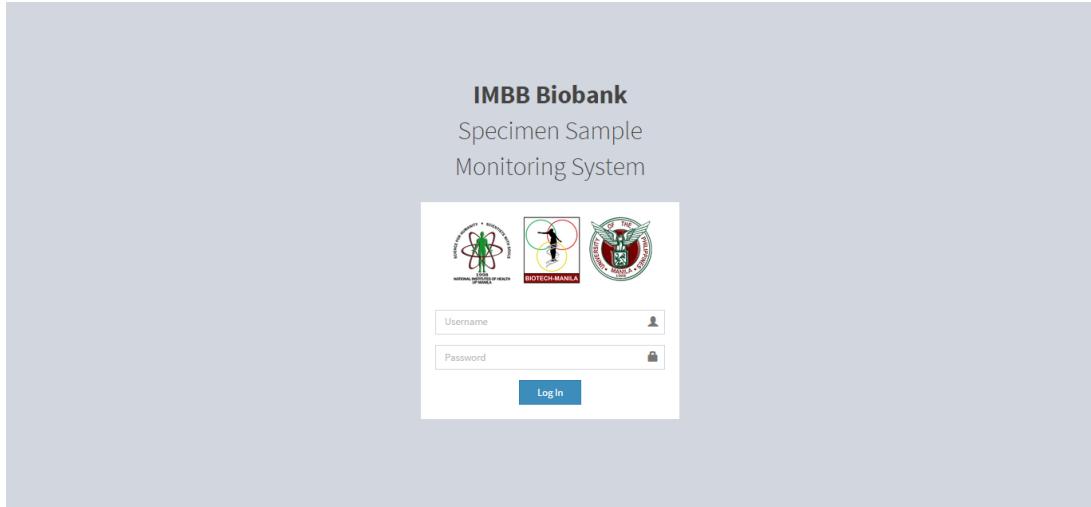


Figure 9: Login Page

Figure 9 shows the Login Page of the system. The page requires the User-name and Password of the user for him/her to start his/her session.

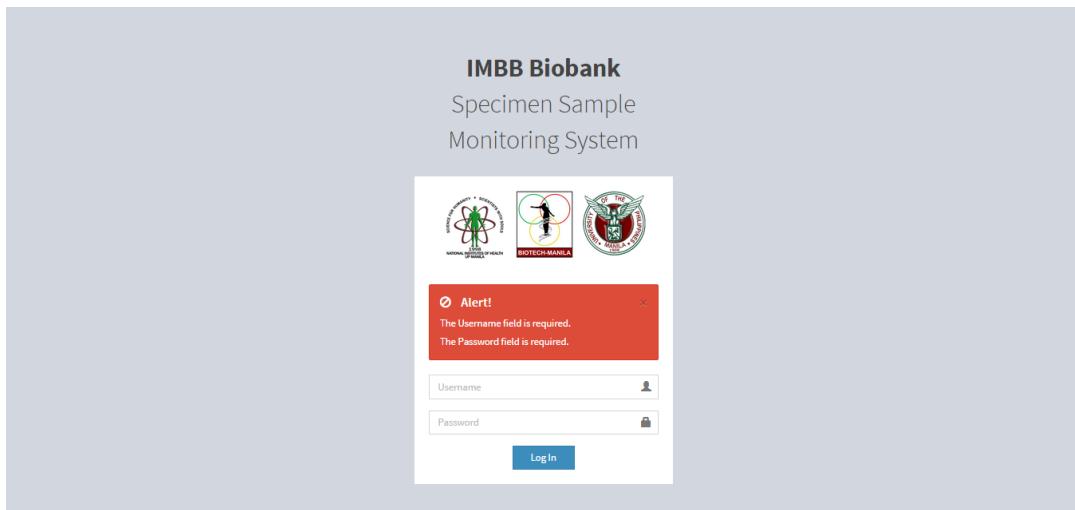


Figure 10: Login Page with warning message

A warning sign as shown in figure 10 will be displayed if the user clicked the LOGIN button without entering his/her Username and Password.

## 2. Home Page

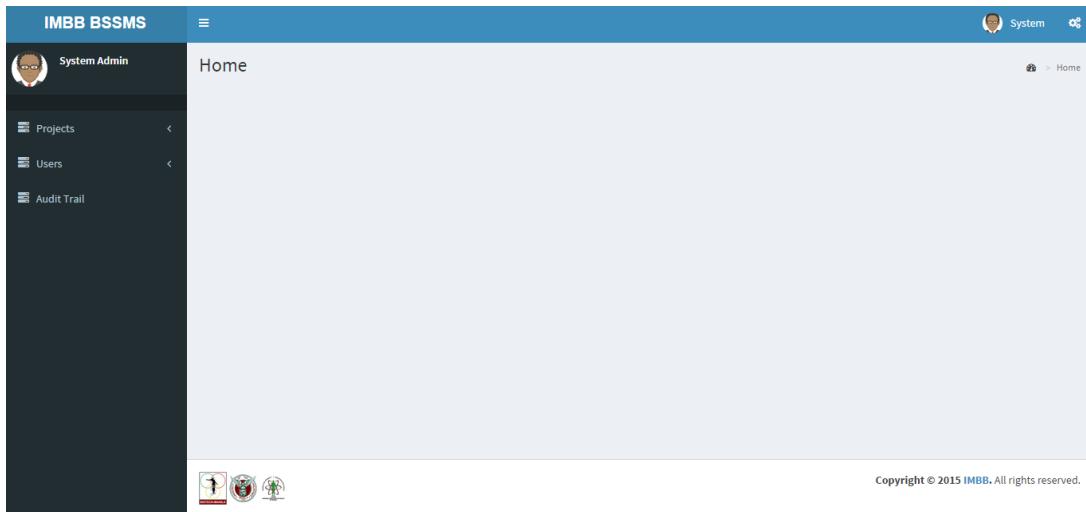


Figure 11: Home Page of System Administrator

Figure 11 shows the Home Page or Dashboard of a system administrator after he/she successfully logged in.

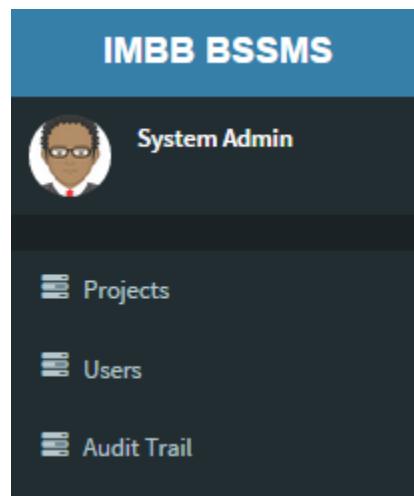


Figure 12: Side-bar Menu Options for System Administrator

On the left side of the page, a sidebar menu is available with options including: PROJECTS, USERS, and AUDIT TRAIL. These options shown in figure 12 enable the system administrator to navigate and perform his/her tasks.

The screenshot shows the IMBB BSSMS Home page. At the top, there is a header bar with the title 'IMBB BSSMS' and a user profile for 'Alexander Pierce'. Below the header is a sidebar with the user's name and role: 'Alexander Pierce' and 'Project Head'. The main content area is titled 'Home' and contains a table titled 'Projects'. The table has two columns: 'Project Name' and 'Role'. The data in the table is as follows:

Project Name	Role
000100 Anti Diarrhea Project	Researcher
000108 Anti-Dengue Project	Project Head
000190 Anti-Bacterial Infection Project	Researcher
000201 Anti-TB Project	Project Head
000211 Anti-Lung Cancer Research	Project Head
000890 Anti-Cervix Cancer Research	Project Head

At the bottom of the page, there is a footer with copyright information: 'Copyright © 2015 IMBB. All rights reserved.' and some icons.

Figure 13: Home Page of Project Head and Researcher

Figure 13 shows the Home Page or Dashboard of a project head and researcher after he/she successfully logged in. The page consists of a list of projects that the user is currently assigned on and his/her role on each projects. After he/she chose a particular project by clicking the Project Name, a sidebar menu on the left side of the page will be available with options depending on his/her role in the chosen project.

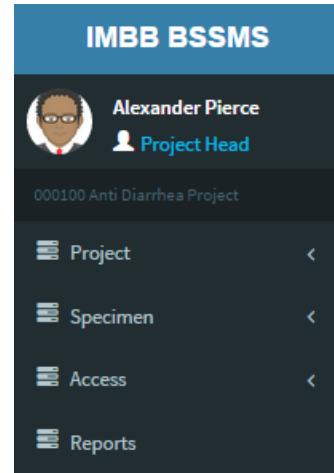


Figure 14: Side-bar Menu Options for Project Head

For a project head, the options include PROJECTS, SPECIMEN, ACCESS, and REPORTS. On the other hand, the options for a researcher include PROJECTS, SPECIMEN, and ACCESS. These options shown in figure 14 and 15 enable the user to navigate and perform his/her tasks.

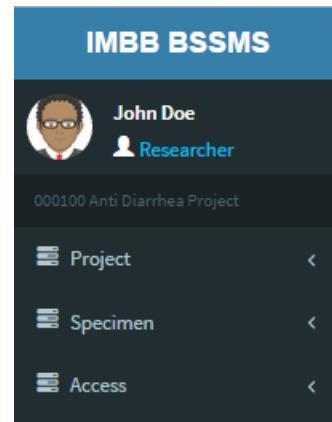


Figure 15: Side-bar Menu Options for Researcher

### 3. New Project Page

The screenshot shows the 'New Project' page. The left sidebar is titled 'System Admin' and includes 'Projects' (with 'New Project' highlighted), 'Users', and 'Audit Trail'. The main content area has a title 'New Project' and a sub-section 'Project Information'. It contains fields for 'Project Name\*' (with placeholder 'Enter Project Name'), 'Description' (with placeholder 'Enter Description'), 'Start Date' (with placeholder 'mm/dd/yyyy'), and 'End Date' (with placeholder 'mm/dd/yyyy'). To the right, there is a 'Project Head\*' field with a dropdown menu and a 'Researchers\*' field with a dropdown menu containing names: Mike Doe, Alexander Pierce, Sheila Mae Jornadal, Kriselle Silvestre, Dionalei Dadivo, and Paul Macaraeg. At the bottom, there are 'Add' and 'Clear' buttons, and a footer with icons for Home, Projects, and Help, along with the text 'Copyright © 2015 IMBB. All rights reserved.'

Figure 16: New Project Page

Figure 16 shows the New Project Page under the PROJECTS option. This page is only available to the system administrator because he/she is the one responsible in adding new projects. The required fields are those with red asterisk beside them. These fields include Project Name, Project Head, and Researchers.

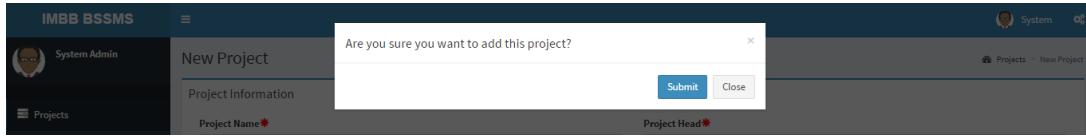


Figure 17: New Project Confirmation Modal

After filling out the project data and clicking the ADD button, a confirmation modal will be displayed as shown in figure 17.

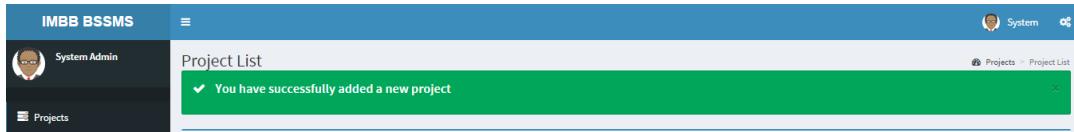


Figure 18: New Project Success Message

After clicking the SUBMIT button, a message will be displayed as shown in figure 18 if the system administrator has successfully added a new project.

#### 4. Project List Page

Project List					
Projects Show 10 entries Edit Project Name Project Description Start Date End Date					
Search: <input type="text"/> 000108 Anti-Dengue Project This project aims to fight dengue in the country. 2001-09-09 2020-09-09 000201 Anti-TB Project This project aims to fight tuberculosis in the Philippines. 2001-10-10 2016-09-10 000190 Anti-Bacterial Infection Project This project aims to prevent the spread of bacterial infection in the Philippines. 2010-01-02 2017-10-10 000100 Anti Diarrhea Project This project aims to lessen the diarrhea cases in the country. 2000-02-02 2020-10-10 000090 Anti-Heart Disease Research This project aims to lessen the cases of heart disease in the country. 2001-09-09 2019-10-10 000090 Anti-Cervical Cancer Research This project aims to fight cervical cancer in the country. 2000-09-09 2018-10-10 000090 Anti-Liver Cancer Project This project aims to cure liver cancer in the Philippines. 2000-09-09 2020-10-10 000211 Anti-Lung Cancer Research This project aims to fight lung cancer in the Philippines. 2000-09-09 2019-10-10 000303 Study of Diabetes This project aims to discover probable solutions for diabetes					
Show 1 to 9 of 9 entries					
Previous	1	Next			

Figure 19: Project List Page

Figure 19 shows the Project List Page under the PROJECTS option. The page contains a tabular list of all the existing projects and only available for

system administrator. The table can be sorted by clicking the table header of the column desired to be sorted by.

## 5. Edit Project Page

Figure 20: Edit Project Page

An existing project can be updated by clicking the edit button beside the project that the system administrator wants to edit in the project list shown in figure 19. Then, the form shown in figure 20 will be displayed to enable him/her to change the information of the project.

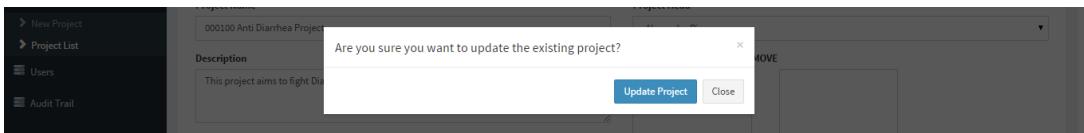


Figure 21: Edit Project Confirmation Modal

After filling out the project data and clicking the UPDATE button, a confirmation modal will be displayed as shown in figure 21.

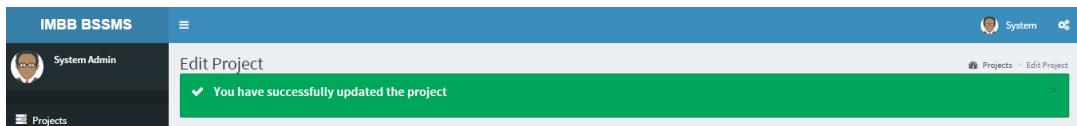


Figure 22: Edit Project Success Message

After clicking the UPDATE PROJECT button, a message will be displayed as shown in figure 22 if the system administrator has successfully updated an existing project.

## 6. About Project Page

A screenshot of the 'View Project' page for the '000100 Anti Diarrhea Project'. The left sidebar shows a navigation menu with 'Project' selected. The main content area is titled 'View Project' and contains two sections: 'Project Information' and 'Project Head and Researchers Information'.

Name	Description	Start Date	End Date
000100 Anti Diarrhea Project	This project aims to lessen the diarrhea cases in the country.	2000-02-02	2020-10-10

Project Head	Researchers
Mike Doe	Alexander Pierce

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Figure 23: About Project Page

After choosing a project, the project head and researcher will be redirected to a page containing the information about the project as shown in figure 23.

## 7. Update Project Page

Figure 24: Update Project Page

Figure 24 shows the Update Page under the PROJECT option. This page is only accessible by the project head.

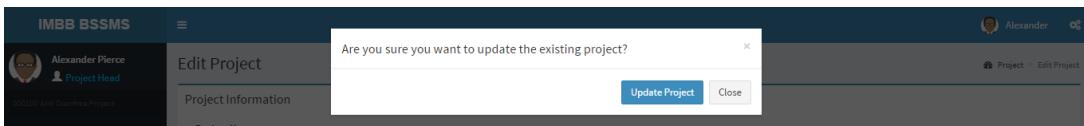


Figure 25: Update Project Confirmation Modal

After filling out the project data and clicking the Update button, a confirmation modal will be displayed as shown in figure 25.



Figure 26: Update Project Success Message

After clicking the UPDATE PROJECT button, a message will be displayed as shown in figure 26 if the project head has successfully updated the current project.

## 8. New Specimen Sample Page

Figure 27: New Specimen Sample Page

The task of adding new specimen sample is assigned to the project head. To do this, he/she needs to fill out information about the specimen sample, its source, and the location in which the specimen sample will be placed as shown in figure 27.

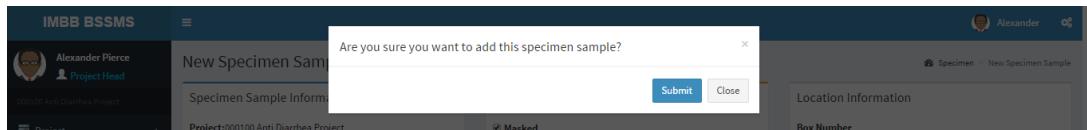


Figure 28: New Specimen Sample Confirmation Modal

After filling out the specimen sample data and clicking the ADD button, a confirmation modal will be displayed as shown in figure 28.



Figure 29: New Specimen Sample Success Message

After clicking the SUBMIT button, a message will be displayed as shown in figure 29 if the project head has successfully added a new specimen sample.

## 9. Specimen Sample List Page

Specimen Sample Barcode	Specimen Type	Current Volume
000000	cerebrospinal fluid	90
000000	whole blood	100
2222111	cerebrospinal fluid	1000
11111111111111	whole blood	1000
Specimen Sample Barcode	Specimen Type	Current Volume

Showing 1 to 4 of 4 entries

Figure 30: Specimen Sample List Page

Figure 30 shows the Specimen Sample List Page under the SPECIMEN option. The page contains a tabular list of all the existing specimen samples of the current project. The table can be sorted by clicking the table header of the column desired to be sorted by. If the user is a project head, the EDIT button beside the specimen sample will be visible.

## 10. Edit Specimen Sample Page

Project	Sample Barcode	Collection Date	Original Volume	Current Volume	Specimen Type
Anti-TB Project	808080	09/09/2009	1000	90	cerebrospinal fluid

Figure 31: Edit Page - Specimen Sample Information

Figure 31 shows the editable form to update the specimen sample informa-

tion, all the fields can be change except the project in which the specimen sample is shared.

Source Information				
First Name	Last Name	Sex	Date of Birth	Hospital Name
<input type="text"/>	<input type="text"/>	<input checked="" type="radio"/> Female <input type="radio"/> Male	<input type="text"/>	Philippine General Hospital
<input type="button" value="Update"/>				

Figure 32: Edit Page - Source Information

On the other hand, figure 32 shows the form to update the information of the source from where the specimen sample is obtained.

Test Information				
Test	Amount	Result	Notes	
PCR	100	positive		
PCR	10			
LAMP	700			
Microscopy	100			
<input type="button" value="Update"/>				

Figure 33: Edit Page - Test Information

Figure 33 shows the form to update the information about the tests done on

Location Information						
Freezer	Shelf	Rack	Rack Level	Box	Row	Column
Ultra Low Freezer	1	1	1	1	B	1
<input type="button" value="Update"/>						

Figure 34: Edit Page - Location Information

On the other hand, figure 34 shows the form to update the location of the sample in a freezer. The only fields that can be updated are the box number, row, and column.

The four parts that can be updated in the specimen sample information as shown in figure 31, 32, 32, and 34 are all available to the project head while the researcher can only update the test information part.

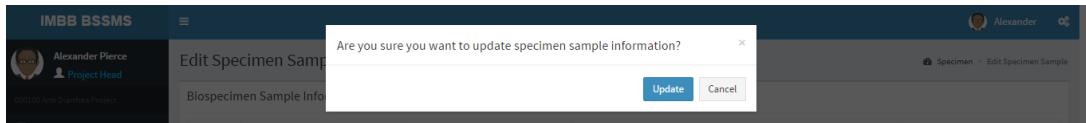


Figure 35: Edit Specimen Sample Confirmation Modal

After filling out the specimen sample data and clicking the Update button, a confirmation modal will be displayed as shown in figure 35.



Figure 36: Edit Specimen Sample Success Message

After clicking the UPDATE button, a message will be displayed as shown in figure 36 if the user has successfully updated an existing specimen sample.

## 11. Specimen Sample Access Page

A screenshot of the "Specimen Sample Access" page. The left sidebar shows a navigation menu with "Project", "Specimen", "Access" (which is expanded to show "Sample Access" and "Sample Access Logs"), and "Reports". The main content area is titled "Specimen Sample Access" and contains three input fields: "Amount\* (in microliters/milligrams)" with a text input field, "Test\*" with a dropdown menu, and "Sample Barcode\*" with a text input field and a "Scan/Enter Barcode" button. At the bottom right of the page is a copyright notice: "Copyright © 2015 IMBB. All rights reserved.".

Figure 37: Specimen Sample Access Page

Figure 37 shows the page where the project head and researcher will record their specimen sample access. All the fields in the form are required to be filled out, otherwise, the access will not be recorded.



Figure 38: Specimen Sample Access Confirmation Modal

After filling out the specimen sample access data and clicking the SUBMIT button, a confirmation modal will be displayed as shown in figure 38.

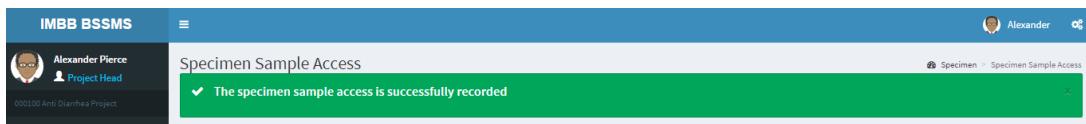


Figure 39: Specimen Sample Access Success Message

After clicking the SUBMIT button, a message will be displayed as shown in figure 39 if the user has successfully accessed a specimen sample.

## 12. Specimen Sample Access Logs Page

Sample Access Logs					
Sample Access Logs					
Date/Time	Sample	Amount Obtained	Test	User	
2015-06-08 08:04:54	808080	100	PCR	Anti-TB Project	
2015-06-08 08:50:22	808080	10	PCR	Anti-TB Project	
2015-06-09 11:09:34	808080	700	LAMP	Alexander Pierce	
2015-06-09 11:09:57	808080	100	Microscopy	Alexander Pierce	
2015-06-09 11:12:39	909090	800	ELISA	Alexander Pierce	

Showing 1 to 5 of 5 entries

Previous 1 Next

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Figure 40: Specimen Sample Access Logs Page

As a project head, he/she will be able to view the list of logs of the specimen sample access in the project that he/she handles. As shown in figure 40,

the logs include the timestamp, amount and the researcher who access the specimen sample.

### 13. Specimen Sample Reports Page

Specimen Type	Number of Specimen Samples
cell culture	0
cerebrospinal fluid	2
microbial culture	0
plasma	0
serum	0
stool	0
tissue	0
urine	0
whole blood	2

Figure 41: Specimen Sample Reports Page

Figure 41 shows a report about the specimen sample of a project. This page is only available to the project head. He/she can also export the report in portable document format (pdf) by clicking the export button on the upper right side of the page.

Specimen Type	Number of Specimen Samples
whole blood	2
serum	0
plasma	0
stool	0
tissue	0
cell culture	0
microbial culture	0
urine	0
cerebrospinal fluid	2

Figure 42: Specimen Sample Report in PDF format

An example of a specimen sample report in pdf format is shown in figure 42.

## 14. New User Page

The screenshot shows the 'New User' page. The left sidebar has a dark theme with white text. The 'Users' link is highlighted. The main area has a light gray background. The 'User Information' form consists of several input fields: 'Username \*' (with placeholder 'Enter Username'), 'Password \*' (with placeholder 'Enter Password'), 'First Name' (with placeholder 'Enter First Name'), 'Last Name' (with placeholder 'Enter Last Name'), 'Email Address' (with placeholder 'Enter Email Address'), and 'Date of Birth' (with placeholder 'mm/dd/yyyy'). Below these are two radio buttons for 'Sex': 'Female' and 'Male'. At the bottom right of the form are 'Add User' and 'Clear' buttons. The footer contains copyright information: 'Copyright © 2015 IMBB. All rights reserved.' and three small icons.

Figure 43: New User Page

Figure 43 shows the New User Page which is only available to the system administrator.

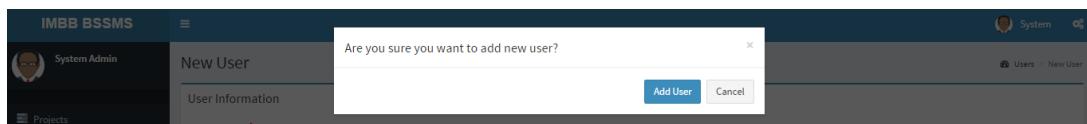


Figure 44: New User Confirmation Modal

After filling out the specimen sample access data and clicking the ADD button, a confirmation modal will be displayed as shown in figure 44.

After clicking the ADD USER button, a message will be displayed as shown in figure 45 if the system administrator has successfully added the new user.

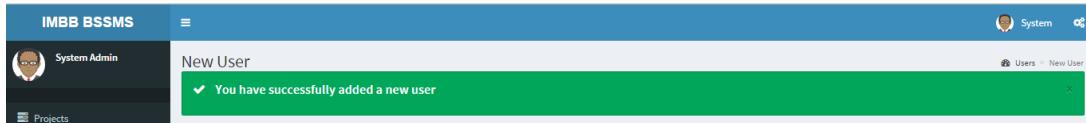


Figure 45: New User Success Message

## 15. User List Page

Active	Username	First Name	Last Name	Email Address	Sex	Date of Birth
Active	Username	First Name	Last Name	Email Address	Sex	Date of Birth
<input checked="" type="checkbox"/>	sysadmin	System	Admin	sysadmin@example.com		0000-00-00
<input checked="" type="checkbox"/>	jdoe	Mike	Doe	jdoe@example.com	male	1990-03-03
<input checked="" type="checkbox"/>	apierce	Alexander	Pierce	apierce@example.com	female	1990-01-01
<input checked="" type="checkbox"/>	sjomadal	Sheila Mae	Jomadal	sheilajomadal@gmail.com	female	1995-03-18
<input checked="" type="checkbox"/>	kalivestre	Kriselle	Silvestre	ksilivestre@mail.com	female	1994-03-09
<input checked="" type="checkbox"/>	ddadivo	Dionalei	Dadivo	ddadivo@mail.com	female	1995-03-29
<input checked="" type="checkbox"/>	pmacaraeg	Paul	Macaraeg	pmacaraeg@mail.com	male	1990-03-03

Showing 1 to 7 of 7 entries

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Figure 46: User List Page

The list of users can be seen by the system administrator by viewing the page shown in figure 46. The list of users are tabulated and the table can be sorted by clicking the header of the column.

## 16. Activate/Deactivate User

Active	Username	First Name	Last Name	Email Address	Sex	Date of Birth
Active	Username	First Name	Last Name	Email Address	Sex	Date of Birth
<input checked="" type="checkbox"/>	sysadmin	System	Admin	sysadmin@example.com		0000-00-00
<input checked="" type="checkbox"/>	jdoe	Mike	Doe	jdoe@example.com	male	1990-03-03
<input checked="" type="checkbox"/>	apierce	Alexander	Pierce	apierce@example.com	female	1990-01-01
<input checked="" type="checkbox"/>	sjomadal	Sheila Mae	Jomadal	sheilajomadal@gmail.com	female	1995-03-18
<input checked="" type="checkbox"/>	kalivestre	Kriselle	Silvestre	ksilivestre@mail.com	female	1994-03-09
<input checked="" type="checkbox"/>	ddadivo	Dionalei	Dadivo	ddadivo@mail.com	female	1995-03-29
<input checked="" type="checkbox"/>	pmacaraeg	Paul	Macaraeg	pmacaraeg@mail.com	male	1990-03-03

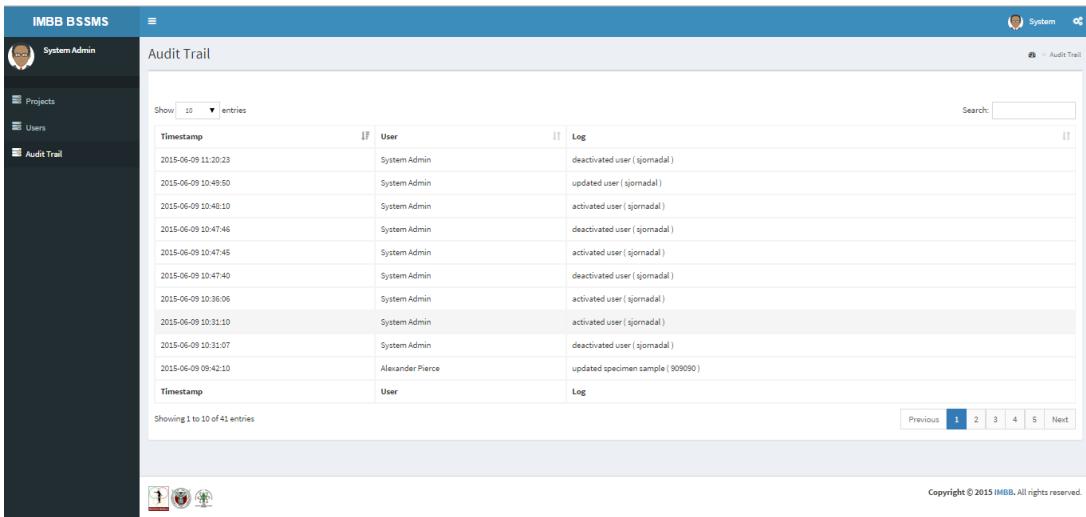
Showing 1 to 7 of 7 entries

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Figure 47: User List Page with deactivated user

A user which has an active status has a check button beside his/her user account in the users list. Otherwise, he/she is deactivated. To activate a user, the system administrator will simply click the button with an 'x' beside the user account that he/she wants to activate. On the other hand, if he/she wants to deactivate a user, the system administrator will simply click the button with a check icon beside the user that he/she wants to activate. The buttons are in the rightmost side of the table shown in figure 47.

## 17. Audit Trail Page



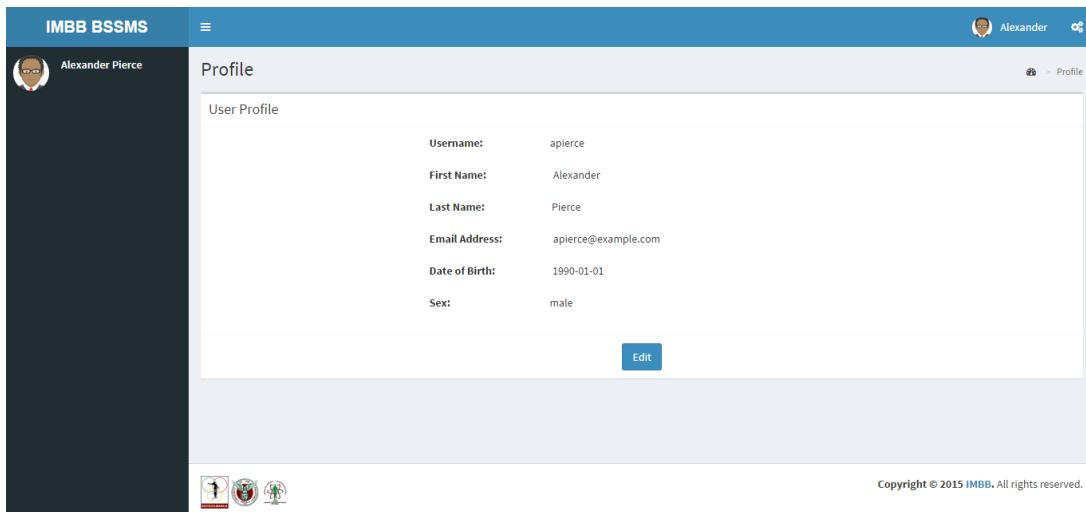
The screenshot shows the IMBB BSSMS Audit Trail page. The left sidebar has a 'System Admin' profile picture and navigation links for 'Projects', 'Users', and 'Audit Trail'. The main content area is titled 'Audit Trail' and contains a table with three columns: 'Timestamp', 'User', and 'Log'. The table lists 41 entries from June 9, 2015, at 11:20:23 to 09:42:10. The logs describe various actions like 'deactivated user (sjornadal)', 'updated user (sjornadal)', and 'activated user (sjornadal)'. The last entry is for 'Alexander Pierce' who 'updated specimen sample ( 909090 )'. At the bottom, it says 'Showing 1 to 10 of 41 entries' and has a 'Previous' button followed by page numbers 1 through 5 and a 'Next' button. The footer includes the copyright notice 'Copyright © 2015 IMBB. All rights reserved.'

Timestamp	User	Log
2015-06-09 11:20:23	System Admin	deactivated user (sjornadal)
2015-06-09 10:49:50	System Admin	updated user (sjornadal)
2015-06-09 10:48:10	System Admin	activated user (sjornadal)
2015-06-09 10:47:46	System Admin	deactivated user (sjornadal)
2015-06-09 10:47:45	System Admin	activated user (sjornadal)
2015-06-09 10:47:40	System Admin	deactivated user (sjornadal)
2015-06-09 10:36:06	System Admin	activated user (sjornadal)
2015-06-09 10:31:10	System Admin	activated user (sjornadal)
2015-06-09 10:31:07	System Admin	deactivated user (sjornadal)
2015-06-09 09:42:10	Alexander Pierce	updated specimen sample ( 909090 )

Figure 48: Audit Trail Page

A list of system logs can be viewed by the system administrator as shown in figure 48. The logs include the timestamp, the user that commits the event, and the description of the log or event.

## 18. User Profile Page



The screenshot shows the user profile page for 'Alexander Pierce'. The top navigation bar includes the IMBB BSSMS logo, a search icon, and a user profile icon labeled 'Alexander'. Below the header, the page title 'Profile' is displayed above a 'User Profile' section. This section contains the following user information:

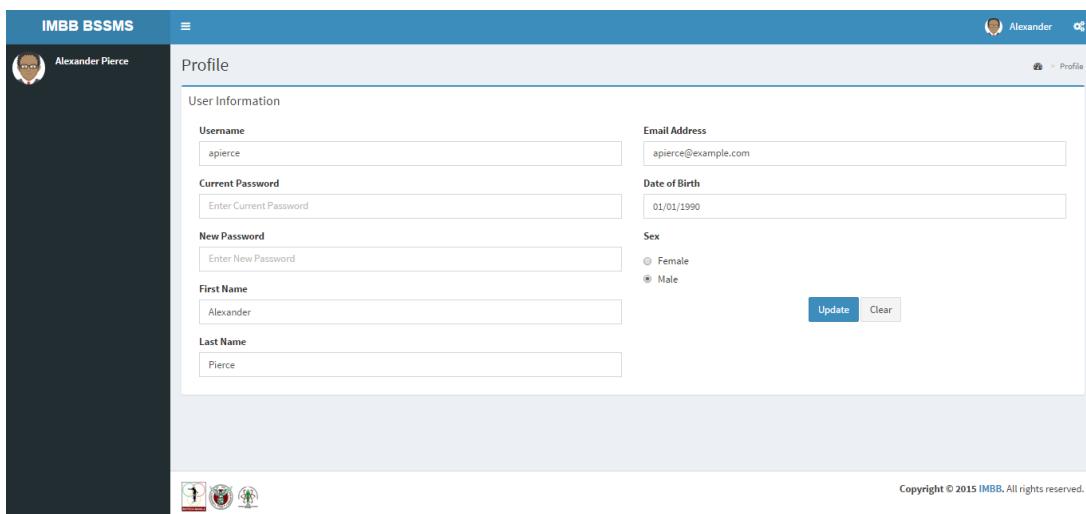
Username:	apierce
First Name:	Alexander
Last Name:	Pierce
Email Address:	apierce@example.com
Date of Birth:	1990-01-01
Sex:	male

An 'Edit' button is located at the bottom right of the profile section. At the very bottom of the page, there are three small circular icons and the copyright notice 'Copyright © 2015 IMBB. All rights reserved.'

Figure 49: User Profile Page

Figure 49 shows the user profile page of the system. An EDIT button is available to enable the user to edit his/her own user profile. After he/she clicked the edit button, a form shown in figure 50 will be displayed.

## 19. Edit User Profile Page



The screenshot shows the 'Edit User Profile' page for 'Alexander Pierce'. The top navigation bar is identical to Figure 49. The main content area is titled 'Profile' and contains a 'User Information' section with the following fields:

Username	apierce	Email Address	apierce@example.com
Current Password	Enter Current Password		
New Password	Enter New Password		
First Name	Alexander		
Last Name	Pierce		

On the right side of the form, there are 'Date of Birth' (01/01/1990), 'Sex' (radio buttons for Female and Male, with Male selected), and two buttons: 'Update' and 'Clear'. At the bottom of the page, there are three small circular icons and the copyright notice 'Copyright © 2015 IMBB. All rights reserved.'

Figure 50: Edit User Profile Page

To edit user profile, the user must fill-out the current password field. Otherwise, his/her modifications will not be saved.

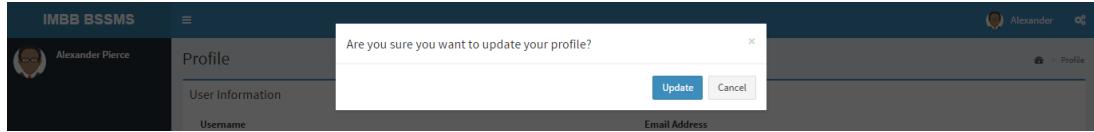


Figure 51: Edit User Profile Confirmation Modal

After filling out the user data and clicking the UPDATE button, a confirmation modal will be displayed as shown in figure 51.

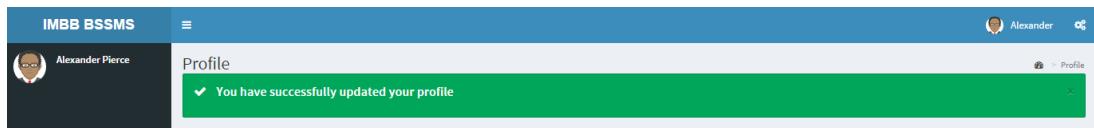


Figure 52: Edit User Profile Success Message

After clicking the UPDATE button, a message will be displayed as shown in figure 52 if the user has successfully updated his/her user profile.

20. Sign out

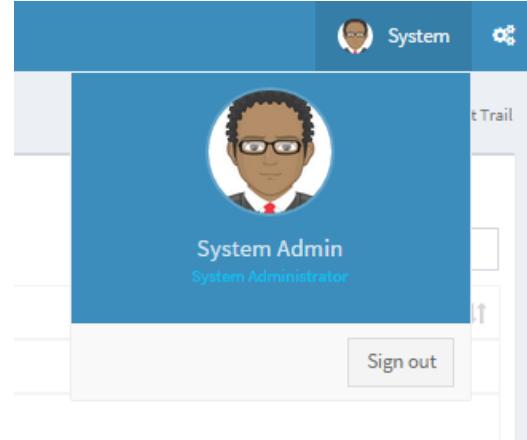


Figure 53: Sign Out

The user can click the SIGN OUT button shown in figure 51 if he/she wants to sign out of the system.

## VI. Discussions

The IMBB Biobank Specimen Sample Monitoring System is a web-based application system that provides a convenient and standard way to monitor and track all the specimen samples within the institute. It uses different technologies such as frameworks and libraries to ensure that the objectives of the study will be achieved.

The system was designed to have 3 types of users namely: system administrator, project heads, and researchers. The role of the system administrator is to manage the user accounts and projects. Managing the user accounts includes adding, activating and deactivating user accounts. In terms of managing the projects, the system administrator is the one responsible in adding new project and assigning its corresponding project head and researchers.

On the other hand, the role of project heads is to update the project information , manage specimen samples and view specimen sample access logs and reports. Managing the specimen samples includes adding and updating their basic information, source information, test information, and location information. All the basic information can be edited except for the project/s in which the specimen sample is shared. The project heads can also view the specimen sample access logs recorded in the system by the researchers of the projects handling each specimen samples. He/she can also view and generate reports on the specimen samples for each of his/her research projects. These report is downloadable in pdf format.

Moreover, the role of the researchers is to record specimen sample accesses and update test information of each specimen samples that they handle. In recording the specimen sample access, the data that they are required to supply are the amount or portion of the specimen sample, the test that they will perform on the specimen sample, and importantly, the specimen sample barcode which serves as the unique identifier of each specimen samples. On the other hand, updating the test information of the specimen samples include adding the result and notes of each tests performed on them. The result can only be positive or negative.

In terms of technologies, Codeigniter<sup>13</sup> is used as the main framework of the monitoring system. Although it is quite difficult to use, this framework enables the developer to have a flexible system development. The helper libraries provided by the Codeigniter framework such as form, date and the others made the development of the system to be efficient and more effective.

Bootstrap<sup>14</sup> is used as the front-end framework of the system. It manages HTML, CSS, javascript, and jQuery files well. It also provides a user-friendly user interface or views for the system's users.

MySQL<sup>15</sup> is used as the database of the monitoring system. For the record, designing the database of the system became quite difficult and took a long time span in doing so. But, after some times of further analysis, a good database design is successfully obtained.

The system uses mPDF<sup>16</sup>, a PHP class, to generate PDF files of the specimen sample reports of each research projects.

The system also supports barcode scanning to provide an easy way of recording and logging information about the specimen samples. But in case of the inability to provide a barcode scanner, manual input can also be an alternative procedure.

---

<sup>13</sup><http://www.codeigniter.com/>

<sup>14</sup><http://getbootstrap.com/>

<sup>15</sup><https://www.mysql.com/>

<sup>16</sup><http://www.mpdf1.com/mpdf/index.php>

## VII. Conclusions

The IMBB Biobank Specimen Sample Monitoring System is a web-based application tool which uses different frameworks and libraries that are necessary to successfully monitor and track the specimen samples used by the researchers of the institute. Such technologies produce an output that serves as a standard way for the project head and researchers to accomplish their tasks, specifically those that are related in handling specimen samples.

Particularly, the developed system provides a way for the project heads to monitor all the specimen sample accesses of every researchers working under the research project that they handle as well as the specimen sample accesses of other projects, provided that the specimen sample is shared with them. The system also caters a way for the project heads and researchers to be updated on the current amount or volume of each specimen samples that are dedicated for the research project that they are working on. Additionally, the output also enable the project heads and researchers to locate a particular specimen sample in a freezer-rack-box storage hierarchy. This way, the time-consuming searches inside the freezer may be lessen or eliminated. Moreover, the system also produces updated report about the specimen sample for each research projects which can be used by the institute for their documentation and analysis procedures.

All the functionalities mentioned previously are all contained in the developed system so that a standard way of monitoring and tracking specimen samples in IMBB will be successfully achieved.

## **VIII. Recommendations**

The IMBB Biobank Specimen Sample Monitoring System is a web-based application tool that addressed the problems faced by the researchers in IMBB specifically the monitoring of specimen sample amount, access, and location. However, there is always a room for improvement.

The system can be further enhanced by adding some additional and needed functionalities like sending emails or SMS to the person-in-charge whenever the amount of specific specimen sample approach its threshold or limiting amount. The developer can use libraries to add these capabilities.

It is also recommended for future developers to further automate the generation of specimen sample reports per project by adding graphs and charts which can be generated with the use of libraries like Highcharts JS. This additional functionality will be beneficial for the institute's documentation and trends analysis.

A query builder is also suggested so that the system will be more flexible in providing the data needed by the users. This will be helpful especially for the researchers if they need to know and obtain other several information about the specimen samples.

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# X. Appendix

## A. Source Code

Listing 1: Authenticate.php

```

1 <?php
2 class Authenticate extends CI_Controller
3 {
4     function __construct()
5     {
6         parent::__construct();
7         $this->load->model('AuthenticateModel','','TRUE');
8         $this->load->model('UserModel','','TRUE');
9     }
10    function index()
11    {
12        $this->load->helper(array('form'));
13        $data['pageTitle'] = "Login Page";
14        $this->load->view('authenticate/login',
15        $data);
16    }
17    function login()
18    {
19        $username = $this->input->post('username');
20        $password = $this->input->post('password');
21    }
22
23    if( $this->AuthenticateModel->validate()
24    && $this->UserModel->isRegisteredUser(
25        $username, $password ) )
26    {
27        if( $this->AuthenticateModel->loginUser(
28            $username, $password ) )
29        {
30            redirect('dashboard');
31        }
32    }
33    else
34    {
35        $this->load->view('authenticate/login');
36    }
37
38 }
39
40 function logout()
41 {
42     $this->AuthenticateModel->logoutuser();
43     redirect('/');
44 }
45
46 }

```

Listing 2: AuthenticateModel.php

```

1 <?php
2 class AuthenticateModel extends CI_Model
3 {
4     function __construct()
5     {
6         parent::__construct();
7     }
8
9     function validate()
10    {
11        $this->load->library('form_validation');
12        $this->form_validation->set_rules(
13            'username', 'Username', 'trim|required|xss_clean');
14        $this->form_validation->set_rules(
15            'password', 'Password', 'trim|required|xss_clean');
16    }
17
18    function loginUser( $username, $password )
19    {
20        $query = $this->db
21            ->where('username', $username)
22            ->where('password', md5($password))
23            ->where('is_active', 1)
24            ->from('user')
25            ->get();
26
27    if( $query->num_rows() > 0 )
28    {
29        $sessionArray = array(
30            'username' => $query->row()->username,
31            'id' => $query->row()->id,
32            'firstname' => $query->row()->
33            firstname,
34            'lastname' => $query->row()->lastname,
35            'is_sysadmin' => $query->row()->
36            is_sysadmin
37        );
38
39        $this->session->set_userdata('logged_in',
40            $sessionArray);
41        return true;
42    }
43    else
44    {
45        $this->form_validation->set_message(
46            'checkDatabase', 'Invalid username or
47            password');
48        return false;
49    }
50
51 }
52 ?>

```

Listing 3: BoxModel.php

```

1 <?php
2 class BoxModel extends CI_Model
3 {
4     function __construct()
5     {
6         parent::__construct();
7     }
8
9     function getAllBox()
10    {
11        $query = $this->db->get('box');
12
13        if($query->num_rows() > 0)
14        {
15            return $query->result();
16        }
17        else
18        {
19            return false;
20        }
21    }
22
23    function getAllAvailableBox()
24    {
25        $query = $this->db
26            ->where('is_available', 1)
27            ->get('box');
28
29        if($query->num_rows() > 0)
30        {
31            return $query->result();
32        }
33        else
34        {
35            return false;
36        }
37
38
39    function getBoxId($boxNumber)
40    {
41        $query = $this->db
42            ->where('number', $boxNumber)
43            ->limit(1)
44            ->get('box');
45
46        if($query->num_rows() > 0)
47        {
48            return $query->row()->id;
49        }
50
51 }
52 ?>

```

```

50     else
51     {
52         return false;
53     }
54 }
55
56 function insertBox($boxName, $levelId)
57 {
58     $data = array(
59         'name' => $boxName,
60         'level_id' => $levelId
61     );
62
63     $isSuccess = $this->db->insert('box',
64     $data);
65
66     if ($isSuccess)
67     {
68         return $this->db->insert_id();
69     }
70     return false;
71 }
72
73 function countOfBoxInLevel($levelId)
74 {
75     $this->db->like('level_id', $levelId)
76     ->from('box');
77
78     return $this->db->count_all_results();
79 }
80
81 function checkBoxName($boxName)
82 {
83     $query = $this->db
84     ->where('name', $boxName)
85     ->get('box');
86
87     if ($query->num_rows() > 0)
88     {
89         return $query->row()->id;
90     }
91     else
92     {
93         return false;
94     }
95 }
96
97 function getLevelIdContainingBox($boxName)
98 {
99     $query = $this->db
100    ->where('name', $boxName)
101    ->limit(1)
102    ->get('box');
103
104     if ($query->num_rows() > 0)
105     {
106         return $query->row()->level_id;
107     }
108     else
109     {
110         return false;
111     }
112 }
113
114 function updateBoxAvailability($boxId)
115 {
116     $full = true;
117     $query = $this->db
118     ->where('box_id', $boxId)
119     ->get('slot');
120
121     if ($query->num_rows() > 0)
122     {
123         foreach ($query->result() as $row)
124         {
125             if ($row->is_available == 1)
126             {
127                 $full = false;
128                 break;
129             }
130         }
131         if ($full == true)
132         {
133             $this->db
134             ->set('is_available', 0)
135             ->where('id', $boxId)
136             ->update('box');
137
138         }
139     }
140     else
141     {
142         return false;
143     }
144 }
145
146 function getBox($levelId)
147 {
148     $query = $this->db
149     ->where('level_id', $levelId)
150     ->get('box');
151
152     if ($query->num_rows() > 0)
153     {
154         return $query->result();
155     }
156     else
157     {
158         return false;
159     }
160 }
161 ?>
```

Listing 4: Dashboard.php

```
1 <?php if(!defined('BASEPATH')) exit('No direct27
script access allowed');2
3 class Dashboard extends CI_Controller30
4 {31
5     public $userData;32
6
7     function __construct()33
8     {34
9         parent::__construct();35
10        $this->load->model('ProjectModel','','TRUE');36
11        $this->load->model('UserModel','','TRUE');37
12        $this->load->model('UserTypeModel','','TRUE');38
13        $this->load->helper(array('form'))39
14        $this->userData = $this->session->userdata40
15        ('logged_in');41
16        if( $this->userData == null )42
17        {43
18            redirect('authenticate/login');44
19        }45
20    }46
21}47
22 function index()48
23{49
24    $data['user'] = $this->UserModel->50 }
25
```

Listing 5: Profile.php

```
1 <?php
2 class Profile extends CI_Controller
3 {
4     function __construct()
5     {
6         parent::__construct();
7     }
8 }
```

```
26
27     $this->load->model( 'ProjectModel' , '' , TRUE
28     );
29     $this->load->model( 'UserModel' , '' , TRUE );
30     $this->load->model( 'UserTypeModel' , '' ,
31     TRUE );
32     $this->load->model( 'SystemLogModel' , '' ,
33     TRUE );
34
35     if( $this->userData[ 'is_sysadmin' ] == 1 )
36     {
37         $this->load->view( 'dashboard/home_admin' ,
38         $data );
39     }
40     else
41     {
42         $this->userData[ 'projectId' ] = null;
43         $this->userData[ 'userroleId' ] = null;
44         $this->userData[ ' projectName' ] = null;
45         $this->userData[ ' userType' ] = null;
46         $data[ 'projects' ] = $this->ProjectModel
47         ->getAllUserProjects( $userId );
48         $this->load->view( 'dashboard/home' ,
49         $data );
50     }
51 ?>
```

```

11      $this->userData = $this->session->userdata84
12      ('logged_in');
13
14      if( $this->userData == null )85
15      {
16          redirect('authenticate/login');86
17      }
18
19      function index()89
20  {
21      $data['pageTitle'] = "";90
22      $data['pageHeader'] = "Profile";91
23
24      $data['user'] = $this->UserModel->92
25          getUserId($this->userData['id']);93
26      $this->load->view('profile/index', $data);
27  }
28
29      function edit()95
30  {
31      $this->load->helper(array('form'));
32      $data['pageTitle'] = "";97
33      $data['pageHeader'] = "Profile";98
34
35      $data['userTypes'] = $this->UserTypeModel99
36          ->getUserTypes();100
37      $data['user'] = $this->UserModel->101
38          getUserId($this->userData['id']);
39      $this->load->view('profile/edit', $data);
40
41      function update()103
42  {
43      $this->load->helper(array('form'));
44      $data['username'] = $this->userData[,104
45          'username'];
46      $data['firstname'] = $this->userData[,105
47          'firstname'];
48      $data['fullname'] = $this->userData[,106
49          'fullname'];
50      $userId = $this->userData['id'];
51
52      $data['pageTitle'] = "";107
53      $data['pageHeader'] = "Profile";108
54
55      $userId = $this->input->post('userId');109
56      $username = $this->input->post('username');110
57
58      $currentPassword = $this->input->post('111
59      currentPassword');
60      $newPassword = $this->input->post('112
61      newPassword');
62      $firstname = $this->input->post('firstNam113
63      e');
64      $lastname = $this->input->post('lastName');114
65
66      $emailAddress = $this->input->post('115
67      emailAd');
68      $birthdate = $this->input->post('birthDat116
69      ');
70      $sex = $this->input->post('sex');117
71      $isActive = '1';118
72
73      if( $currentPassword != '' )119
74  {
75          if( $this->UserModel->isSamePassword(120
76              $userId, $currentPassword ) == true )121
77
78          if( ( $newPassword != '' ) && ( $this->UserModel->122
79              isSamePassword( $userId, $newPassword ) == false )123
80
81          $this->UserModel->updatePassword(124
82              $userId, $newPassword);
83
84          if( ( $username != '' ) && (125
85              strcasecmp($username, $this->UserModel->126
86              getUsername( $userId ) ) ) )
87
88              $this->UserModel->updateUsername(127
89              $userId, $username);
90
91          if( ( $firstname != '' ) && (128
92              strcasecmp($firstname, $this->UserModel->129
93              getFirstName( $userId ) ) ) )
94
95              $this->UserModel->updateFirstName(140
96              $userId, $firstname);
97
98              $this->session->unset_userdata('141
99                  logged_in')['firstname'];
100             $this->session->unset_userdata('142
101                 logged_in')['fullname'];
102
103             $this->userData['firstname'] =143
104
105             $firstname = $this->UserModel->145
106                 getUserId($this->userData['id']);
107
108             $this->load->view('profile/index', $data);
109
110             $this->session->unset_userdata('146
111                 logged_in')['lastname'];
112             $this->session->unset_userdata('147
113                 logged_in')['fullname'];
114
115             $this->userData['lastname'] =148
116
117             $lastname = $this->UserModel->149
118                 getUserId($this->userData['id']);
119
120             $this->load->view('profile/edit', $data);
121
122             $this->submitSystemLog($log);
123
124             $data['message'] = array(
125                 'type' => 'success',
126                 'icon' => 'check',
127                 'text' => 'You have
128                     successfully updated your profile
129                     ');
130
131             $data['user'] = $this->UserModel->
132                 getUserId($this->userData['id']);
133
134             $this->load->view('profile/index', $data);
135
136             $data['message'] = array(
137                 'type' => 'danger',
138                 'icon' => 'ban',
139                 'text' => 'Invalid current
140                     password';
141
142             $data['user'] = $this->UserModel->
143                 getUserId($this->userData['id']);
144
145             $this->load->view('profile/edit', $data);
146
147             $data['message'] = array(
148                 'type' => 'danger',
149                 'icon' => 'ban',
150                 'text' => 'Current password is
151                     required');
152
153             $data['user'] = $this->UserModel->
154                 getUserId($this->userData['id']);
155
156             $this->load->view('profile/edit', $data);
157
158             $this->submitSystemLog($log);
159
160             $data['message'] = array(
161                 'type' => 'danger',
162                 'icon' => 'ban',
163                 'text' => 'Your password must
164                     contain at least one uppercase
165                     character');
166
167             $data['user'] = $this->UserModel->
168                 getUserId($this->userData['id']);
169
170             $this->load->view('profile/index', $data);
171
172             $this->submitSystemLog($log);
173
174             $data['message'] = array(
175                 'type' => 'danger',
176                 'icon' => 'ban',
177                 'text' => 'Your password must
178                     contain at least one lowercase
179                     character');
180
181             $data['user'] = $this->UserModel->
182                 getUserId($this->userData['id']);
183
184             $this->load->view('profile/index', $data);
185
186             $this->submitSystemLog($log);
187
188             $data['message'] = array(
189                 'type' => 'danger',
190                 'icon' => 'ban',
191                 'text' => 'Your password must
192                     contain at least one digit');
193
194             $data['user'] = $this->UserModel->
195                 getUserId($this->userData['id']);
196
197             $this->load->view('profile/index', $data);
198
199             $this->submitSystemLog($log);
200
201             $data['message'] = array(
202                 'type' => 'danger',
203                 'icon' => 'ban',
204                 'text' => 'Your password must
205                     contain at least one special
206                     character');
207
208             $data['user'] = $this->UserModel->
209                 getUserId($this->userData['id']);
210
211             $this->load->view('profile/index', $data);
212
213             $this->submitSystemLog($log);
214
215             $data['message'] = array(
216                 'type' => 'danger',
217                 'icon' => 'ban',
218                 'text' => 'Your password must
219                     contain at least one punctuation
220                     character');
221
222             $data['user'] = $this->UserModel->
223                 getUserId($this->userData['id']);
224
225             $this->load->view('profile/index', $data);
226
227             $this->submitSystemLog($log);
228
229             $data['message'] = array(
230                 'type' => 'danger',
231                 'icon' => 'ban',
232                 'text' => 'Your password must
233                     contain at least one symbol');
234
235             $data['user'] = $this->UserModel->
236                 getUserId($this->userData['id']);
237
238             $this->load->view('profile/index', $data);
239
240             $this->submitSystemLog($log);
241
242             $data['message'] = array(
243                 'type' => 'danger',
244                 'icon' => 'ban',
245                 'text' => 'Your password must
246                     contain at least one symbol');
247
248             $data['user'] = $this->UserModel->
249                 getUserId($this->userData['id']);
250
251             $this->load->view('profile/index', $data);
252
253             $this->submitSystemLog($log);
254
255             $data['message'] = array(
256                 'type' => 'danger',
257                 'icon' => 'ban',
258                 'text' => 'Your password must
259                     contain at least one symbol');
260
261             $data['user'] = $this->UserModel->
262                 getUserId($this->userData['id']);
263
264             $this->load->view('profile/index', $data);
265
266             $this->submitSystemLog($log);
267
268             $data['message'] = array(
269                 'type' => 'danger',
270                 'icon' => 'ban',
271                 'text' => 'Your password must
272                     contain at least one symbol');
273
274             $data['user'] = $this->UserModel->
275                 getUserId($this->userData['id']);
276
277             $this->load->view('profile/index', $data);
278
279             $this->submitSystemLog($log);
280
281             $data['message'] = array(
282                 'type' => 'danger',
283                 'icon' => 'ban',
284                 'text' => 'Your password must
285                     contain at least one symbol');
286
287             $data['user'] = $this->UserModel->
288                 getUserId($this->userData['id']);
289
290             $this->load->view('profile/index', $data);
291
292             $this->submitSystemLog($log);
293
294             $data['message'] = array(
295                 'type' => 'danger',
296                 'icon' => 'ban',
297                 'text' => 'Your password must
298                     contain at least one symbol');
299
300             $data['user'] = $this->UserModel->
301                 getUserId($this->userData['id']);
302
303             $this->load->view('profile/index', $data);
304
305             $this->submitSystemLog($log);
306
307             $data['message'] = array(
308                 'type' => 'danger',
309                 'icon' => 'ban',
310                 'text' => 'Your password must
311                     contain at least one symbol');
312
313             $data['user'] = $this->UserModel->
314                 getUserId($this->userData['id']);
315
316             $this->load->view('profile/index', $data);
317
318             $this->submitSystemLog($log);
319
320             $data['message'] = array(
321                 'type' => 'danger',
322                 'icon' => 'ban',
323                 'text' => 'Your password must
324                     contain at least one symbol');
325
326             $data['user'] = $this->UserModel->
327                 getUserId($this->userData['id']);
328
329             $this->load->view('profile/index', $data);
330
331             $this->submitSystemLog($log);
332
333             $data['message'] = array(
334                 'type' => 'danger',
335                 'icon' => 'ban',
336                 'text' => 'Your password must
337                     contain at least one symbol');
338
339             $data['user'] = $this->UserModel->
340                 getUserId($this->userData['id']);
341
342             $this->load->view('profile/index', $data);
343
344             $this->submitSystemLog($log);
345
346             $data['message'] = array(
347                 'type' => 'danger',
348                 'icon' => 'ban',
349                 'text' => 'Your password must
350                     contain at least one symbol');
351
352             $data['user'] = $this->UserModel->
353                 getUserId($this->userData['id']);
354
355             $this->load->view('profile/index', $data);
356
357             $this->submitSystemLog($log);
358
359             $data['message'] = array(
360                 'type' => 'danger',
361                 'icon' => 'ban',
362                 'text' => 'Your password must
363                     contain at least one symbol');
364
365             $data['user'] = $this->UserModel->
366                 getUserId($this->userData['id']);
367
368             $this->load->view('profile/index', $data);
369
370             $this->submitSystemLog($log);
371
372             $data['message'] = array(
373                 'type' => 'danger',
374                 'icon' => 'ban',
375                 'text' => 'Your password must
376                     contain at least one symbol');
377
378             $data['user'] = $this->UserModel->
379                 getUserId($this->userData['id']);
380
381             $this->load->view('profile/index', $data);
382
383             $this->submitSystemLog($log);
384
385             $data['message'] = array(
386                 'type' => 'danger',
387                 'icon' => 'ban',
388                 'text' => 'Your password must
389                     contain at least one symbol');
390
391             $data['user'] = $this->UserModel->
392                 getUserId($this->userData['id']);
393
394             $this->load->view('profile/index', $data);
395
396             $this->submitSystemLog($log);
397
398             $data['message'] = array(
399                 'type' => 'danger',
400                 'icon' => 'ban',
401                 'text' => 'Your password must
402                     contain at least one symbol');
403
404             $data['user'] = $this->UserModel->
405                 getUserId($this->userData['id']);
406
407             $this->load->view('profile/index', $data);
408
409             $this->submitSystemLog($log);
410
411             $data['message'] = array(
412                 'type' => 'danger',
413                 'icon' => 'ban',
414                 'text' => 'Your password must
415                     contain at least one symbol');
416
417             $data['user'] = $this->UserModel->
418                 getUserId($this->userData['id']);
419
420             $this->load->view('profile/index', $data);
421
422             $this->submitSystemLog($log);
423
424             $data['message'] = array(
425                 'type' => 'danger',
426                 'icon' => 'ban',
427                 'text' => 'Your password must
428                     contain at least one symbol');
429
430             $data['user'] = $this->UserModel->
431                 getUserId($this->userData['id']);
432
433             $this->load->view('profile/index', $data);
434
435             $this->submitSystemLog($log);
436
437             $data['message'] = array(
438                 'type' => 'danger',
439                 'icon' => 'ban',
440                 'text' => 'Your password must
441                     contain at least one symbol');
442
443             $data['user'] = $this->UserModel->
444                 getUserId($this->userData['id']);
445
446             $this->load->view('profile/index', $data);
447
448             $this->submitSystemLog($log);
449
450             $data['message'] = array(
451                 'type' => 'danger',
452                 'icon' => 'ban',
453                 'text' => 'Your password must
454                     contain at least one symbol');
455
456             $data['user'] = $this->UserModel->
457                 getUserId($this->userData['id']);
458
459             $this->load->view('profile/index', $data);
460
461             $this->submitSystemLog($log);
462
463             $data['message'] = array(
464                 'type' => 'danger',
465                 'icon' => 'ban',
466                 'text' => 'Your password must
467                     contain at least one symbol');
468
469             $data['user'] = $this->UserModel->
470                 getUserId($this->userData['id']);
471
472             $this->load->view('profile/index', $data);
473
474             $this->submitSystemLog($log);
475
476             $data['message'] = array(
477                 'type' => 'danger',
478                 'icon' => 'ban',
479                 'text' => 'Your password must
480                     contain at least one symbol');
481
482             $data['user'] = $this->UserModel->
483                 getUserId($this->userData['id']);
484
485             $this->load->view('profile/index', $data);
486
487             $this->submitSystemLog($log);
488
489             $data['message'] = array(
490                 'type' => 'danger',
491                 'icon' => 'ban',
492                 'text' => 'Your password must
493                     contain at least one symbol');
494
495             $data['user'] = $this->UserModel->
496                 getUserId($this->userData['id']);
497
498             $this->load->view('profile/index', $data);
499
500             $this->submitSystemLog($log);
501
502             $data['message'] = array(
503                 'type' => 'danger',
504                 'icon' => 'ban',
505                 'text' => 'Your password must
506                     contain at least one symbol');
507
508             $data['user'] = $this->UserModel->
509                 getUserId($this->userData['id']);
510
511             $this->load->view('profile/index', $data);
512
513             $this->submitSystemLog($log);
514
515             $data['message'] = array(
516                 'type' => 'danger',
517                 'icon' => 'ban',
518                 'text' => 'Your password must
519                     contain at least one symbol');
520
521             $data['user'] = $this->UserModel->
522                 getUserId($this->userData['id']);
523
524             $this->load->view('profile/index', $data);
525
526             $this->submitSystemLog($log);
527
528             $data['message'] = array(
529                 'type' => 'danger',
530                 'icon' => 'ban',
531                 'text' => 'Your password must
532                     contain at least one symbol');
533
534             $data['user'] = $this->UserModel->
535                 getUserId($this->userData['id']);
536
537             $this->load->view('profile/index', $data);
538
539             $this->submitSystemLog($log);
540
541             $data['message'] = array(
542                 'type' => 'danger',
543                 'icon' => 'ban',
544                 'text' => 'Your password must
545                     contain at least one symbol');
546
547             $data['user'] = $this->UserModel->
548                 getUserId($this->userData['id']);
549
550             $this->load->view('profile/index', $data);
551
552             $this->submitSystemLog($log);
553
554             $data['message'] = array(
555                 'type' => 'danger',
556                 'icon' => 'ban',
557                 'text' => 'Your password must
558                     contain at least one symbol');
559
560             $data['user'] = $this->UserModel->
561                 getUserId($this->userData['id']);
562
563             $this->load->view('profile/index', $data);
564
565             $this->submitSystemLog($log);
566
567             $data['message'] = array(
568                 'type' => 'danger',
569                 'icon' => 'ban',
570                 'text' => 'Your password must
571                     contain at least one symbol');
572
573             $data['user'] = $this->UserModel->
574                 getUserId($this->userData['id']);
575
576             $this->load->view('profile/index', $data);
577
578             $this->submitSystemLog($log);
579
580             $data['message'] = array(
581                 'type' => 'danger',
582                 'icon' => 'ban',
583                 'text' => 'Your password must
584                     contain at least one symbol');
585
586             $data['user'] = $this->UserModel->
587                 getUserId($this->userData['id']);
588
589             $this->load->view('profile/index', $data);
590
591             $this->submitSystemLog($log);
592
593             $data['message'] = array(
594                 'type' => 'danger',
595                 'icon' => 'ban',
596                 'text' => 'Your password must
597                     contain at least one symbol');
598
599             $data['user'] = $this->UserModel->
600                 getUserId($this->userData['id']);
601
602             $this->load->view('profile/index', $data);
603
604             $this->submitSystemLog($log);
605
606             $data['message'] = array(
607                 'type' => 'danger',
608                 'icon' => 'ban',
609                 'text' => 'Your password must
610                     contain at least one symbol');
611
612             $data['user'] = $this->UserModel->
613                 getUserId($this->userData['id']);
614
615             $this->load->view('profile/index', $data);
616
617             $this->submitSystemLog($log);
618
619             $data['message'] = array(
620                 'type' => 'danger',
621                 'icon' => 'ban',
622                 'text' => 'Your password must
623                     contain at least one symbol');
624
625             $data['user'] = $this->UserModel->
626                 getUserId($this->userData['id']);
627
628             $this->load->view('profile/index', $data);
629
630             $this->submitSystemLog($log);
631
632             $data['message'] = array(
633                 'type' => 'danger',
634                 'icon' => 'ban',
635                 'text' => 'Your password must
636                     contain at least one symbol');
637
638             $data['user'] = $this->UserModel->
639                 getUserId($this->userData['id']);
640
641             $this->load->view('profile/index', $data);
642
643             $this->submitSystemLog($log);
644
645             $data['message'] = array(
646                 'type' => 'danger',
647                 'icon' => 'ban',
648                 'text' => 'Your password must
649                     contain at least one symbol');
650
651             $data['user'] = $this->UserModel->
652                 getUserId($this->userData['id']);
653
654             $this->load->view('profile/index', $data);
655
656             $this->submitSystemLog($log);
657
658             $data['message'] = array(
659                 'type' => 'danger',
660                 'icon' => 'ban',
661                 'text' => 'Your password must
662                     contain at least one symbol');
663
664             $data['user'] = $this->UserModel->
665                 getUserId($this->userData['id']);
666
667             $this->load->view('profile/index', $data);
668
669             $this->submitSystemLog($log);
670
671             $data['message'] = array(
672                 'type' => 'danger',
673                 'icon' => 'ban',
674                 'text' => 'Your password must
675                     contain at least one symbol');
676
677             $data['user'] = $this->UserModel->
678                 getUserId($this->userData['id']);
679
680             $this->load->view('profile/index', $data);
681
682             $this->submitSystemLog($log);
683
684             $data['message'] = array(
685                 'type' => 'danger',
686                 'icon' => 'ban',
687                 'text' => 'Your password must
688                     contain at least one symbol');
689
690             $data['user'] = $this->UserModel->
691                 getUserId($this->userData['id']);
692
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694
695             $this->submitSystemLog($log);
696
697             $data['message'] = array(
698                 'type' => 'danger',
699                 'icon' => 'ban',
700                 'text' => 'Your password must
701                     contain at least one symbol');
702
703             $data['user'] = $this->UserModel->
704                 getUserId($this->userData['id']);
705
706             $this->load->view('profile/index', $data);
707
708             $this->submitSystemLog($log);
709
710             $data['message'] = array(
711                 'type' => 'danger',
712                 'icon' => 'ban',
713                 'text' => 'Your password must
714                     contain at least one symbol');
715
716             $data['user'] = $this->UserModel->
717                 getUserId($this->userData['id']);
718
719             $this->load->view('profile/index', $data);
720
721             $this->submitSystemLog($log);
722
723             $data['message'] = array(
724                 'type' => 'danger',
725                 'icon' => 'ban',
726                 'text' => 'Your password must
727                     contain at least one symbol');
728
729             $data['user'] = $this->UserModel->
730                 getUserId($this->userData['id']);
731
732             $this->load->view('profile/index', $data);
733
734             $this->submitSystemLog($log);
735
736             $data['message'] = array(
737                 'type' => 'danger',
738                 'icon' => 'ban',
739                 'text' => 'Your password must
740                     contain at least one symbol');
741
742             $data['user'] = $this->UserModel->
743                 getUserId($this->userData['id']);
744
745             $this->load->view('profile/index', $data);
746
747             $this->submitSystemLog($log);
748
749             $data['message'] = array(
750                 'type' => 'danger',
751                 'icon' => 'ban',
752                 'text' => 'Your password must
753                     contain at least one symbol');
754
755             $data['user'] = $this->UserModel->
756                 getUserId($this->userData['id']);
757
758             $this->load->view('profile/index', $data);
759
760             $this->submitSystemLog($log);
761
762             $data['message'] = array(
763                 'type' => 'danger',
764                 'icon' => 'ban',
765                 'text' => 'Your password must
766                     contain at least one symbol');
767
768             $data['user'] = $this->UserModel->
769                 getUserId($this->userData['id']);
770
771             $this->load->view('profile/index', $data);
772
773             $this->submitSystemLog($log);
774
775             $data['message'] = array(
776                 'type' => 'danger',
777                 'icon' => 'ban',
778                 'text' => 'Your password must
779                     contain at least one symbol');
780
781             $data['user'] = $this->UserModel->
782                 getUserId($this->userData['id']);
783
784             $this->load->view('profile/index', $data);
785
786             $this->submitSystemLog($log);
787
788             $data['message'] = array(
789                 'type' => 'danger',
790                 'icon' => 'ban',
791                 'text' => 'Your password must
792                     contain at least one symbol');
793
794             $data['user'] = $this->UserModel->
795                 getUserId($this->userData['id']);
796
797             $this->load->view('profile/index', $data);
798
799             $this->submitSystemLog($log);
800
801             $data['message'] = array(
802                 'type' => 'danger',
803                 'icon' => 'ban',
804                 'text' => 'Your password must
805                     contain at least one symbol');
806
807             $data['user'] = $this->UserModel->
808                 getUserId($this->userData['id']);
809
810             $this->load->view('profile/index', $data);
811
812             $this->submitSystemLog($log);
813
814             $data['message'] = array(
815                 'type' => 'danger',
816                 'icon' => 'ban',
817                 'text' => 'Your password must
818                     contain at least one symbol');
819
820             $data['user'] = $this->UserModel->
821                 getUserId($this->userData['id']);
822
823             $this->load->view('profile/index', $data);
824
825             $this->submitSystemLog($log);
826
827             $data['message'] = array(
828                 'type' => 'danger',
829                 'icon' => 'ban',
830                 'text' => 'Your password must
831                     contain at least one symbol');
832
833             $data['user'] = $this->UserModel->
834                 getUserId($this->userData['id']);
835
836             $this->load->view('profile/index', $data);
837
838             $this->submitSystemLog($log);
839
840             $data['message'] = array(
841                 'type' => 'danger',
842                 'icon' => 'ban',
843                 'text' => 'Your password must
844                     contain at least one symbol');
845
846             $data['user'] = $this->UserModel->
847                 getUserId($this->userData['id']);
848
849             $this->load->view('profile/index', $data);
850
851             $this->submitSystemLog($log);
852
853             $data['message'] = array(
854                 'type' => 'danger',
855                 'icon' => 'ban',
856                 'text' => 'Your password must
857                     contain at least one symbol');
858
859             $data['user'] = $this->UserModel->
860                 getUserId($this->userData['id']);
861
862             $this->load->view('profile/index', $data);
863
864             $this->submitSystemLog($log);
865
866             $data['message'] = array(
867                 'type' => 'danger',
868                 'icon' => 'ban',
869                 'text' => 'Your password must
870                     contain at least one symbol');
871
872             $data['user'] = $this->UserModel->
873                 getUserId($this->userData['id']);
874
875             $this->load->view('profile/index', $data);
876
877             $this->submitSystemLog($log);
878
879             $data['message'] = array(
880                 'type' => 'danger',
881                 'icon' => 'ban',
882                 'text' => 'Your password must
883                     contain at least one symbol');
884
885             $data['user'] = $this->UserModel->
886                 getUserId($this->userData['id']);
887
888             $this->load->view('profile/index', $data);
889
890             $this->submitSystemLog($log);
891
892             $data['message'] = array(
893                 'type' => 'danger',
894                 'icon' => 'ban',
895                 'text' => 'Your password must
896                     contain at least one symbol');
897
898             $data['user'] = $this->UserModel->
899                 getUserId($this->userData['id']);
900
901             $this->load->view('profile/index', $data);
902
903             $this->submitSystemLog($log);
904
905             $data['message'] = array(
906                 'type' => 'danger',
907                 'icon' => 'ban',
908                 'text' => 'Your password must
909                     contain at least one symbol');
910
911             $data['user'] = $this->UserModel->
912                 getUserId($this->userData['id']);
913
914             $this->load->view('profile/index', $data);
915
916             $this->submitSystemLog($log);
917
918             $data['message'] = array(
919                 'type' => 'danger',
920                 'icon' => 'ban',
921                 'text' => 'Your password must
922                     contain at least one symbol');
923
924             $data['user'] = $this->UserModel->
925                 getUserId($this->userData['id']);
926
927             $this->load->view('profile/index', $data);
928
929             $this->submitSystemLog($log);
930
931             $data['message'] = array(
932                 'type' => 'danger',
933                 'icon' => 'ban',
934                 'text' => 'Your password must
935                     contain at least one symbol');
936
937             $data['user'] = $this->UserModel->
938                 getUserId($this->userData['id']);
939
940             $this->load->view('profile/index', $data);
941
942             $this->submitSystemLog($log);
943
944             $data['message'] = array(
945                 'type' => 'danger',
946                 'icon' => 'ban',
947                 'text' => 'Your password must
948                     contain at least one symbol');
949
950             $data['user'] = $this->UserModel->
951                 getUserId($this->userData['id']);
952
953             $this->load->view('profile/index', $data);
954
955             $this->submitSystemLog($log);
956
957             $data['message'] = array(
958                 'type' => 'danger',
959                 'icon' => 'ban',
960                 'text' => 'Your password must
961                     contain at least one symbol');
962
963             $data['user'] = $this->UserModel->
964                 getUserId($this->userData['id']);
965
966             $this->load->view('profile/index', $data);
967
968             $this->submitSystemLog($log);
969
970             $data['message'] = array(
971                 'type' => 'danger',
972                 'icon' => 'ban',
973                 'text' => 'Your password must
974                     contain at least one symbol');
975
976             $data['user'] = $this->UserModel->
977                 getUserId($this-&
```

**Listing 6: ProjectModel.php**

```

153 { $timestamp, $log, $this->userData['id']);
154     date_default_timezone_set('Asia/Manila');159 }
155     $datestring = "%Y-%m-%d %h:%i:%s";160 }
156     $timestamp = mdate($datestring, time());161
157 }162 ?>
158 $this->SystemLogModel->insertSystemLog(
```

---

```

1 <?php
2 class ProjectModel extends CI_Model
3 {
4     function __construct()
5     {
6         parent::__construct();
7         $this->load->helper('date');
8     }
9
10    function assignUserToProject($userId,
11        $projectId)
12    {
13        $data = array(
14            'user_id' => $userId,
15            'project_id' => $projectId
16        );
17
18        $isSuccess = $this->db->insert(
19            'user_has_project', $data);
20        return $isSuccess;
21    }
22
23    function assignSampleToProject($sampleId,
24        $projectId)
25    {
26        $data = array(
27            'sample_id' => $sampleId,
28            'project_id' => $projectId
29        );
30
31        $isSuccess = $this->db->insert(
32            'project_has_sample', $data);
33
34        if($isSuccess)
35        {
36            return true;
37        }
38    }
39
40    function getProjectSamples($projectId)
41    {
42        $this->db->select("sample.barcode");
43        $this->db->from("project_has_sample",
44            "sample");
45        $this->db->where("project_has_sample.
46            project_id = '$projectId'");
47        $this->db->where('sample.id =
48            project_has_sample.sample_id');
49        $query = $this->db->get();
50
51        if($query->num_rows() > 0)
52        {
53            return $query->result();
54        }
55    }
56
57    function getUserProjects( $userId ,
58        $userTypeId )
59    {
60        $query = $this->db->where( 'user_profile .
61            user_id' , $userId )
62            ->where( 'user_profile .
63            user_type_id' , $userTypeId )
64            ->join('project' , 'project.id =
65            user_profile.project_id')
66            ->from( 'user_profile' )
67            ->get();
68
69        if($query->num_rows() > 0)
70        {
71            return $query->result();
72        }
73    }
74
75    function getUserProjectsExceptSessionProject(
76        ( $userId , $userTypeId , $projectId ) )
77    {
78        $query = $this->db->where( 'user_profile .
79            user_id' , $userId )
80            ->where( 'user_profile .
81            user_type_id' , $userTypeId )
82            ->where( "user_profile .
83            project_id != '$projectId'" )
84            ->join('project' , 'project.id =
85            user_profile.project_id')
86            ->from( 'user_profile' )
87            ->get();
88
89        if ($query->num_rows() > 0)
90        {
91            return $query->result();
92        }
93    }
94
95    function getAllUserProjects( $userId )
96    {
97        $query = $this->db
98            ->select('user_profile.project_id
99                as pid , project.name as pname, user_type.
100               id as uid, user_type.name as utname')
101            ->where( 'user_profile.user_id' ,
102                $userId )
103            ->where( 'project.id =
104                user_profile.project_id' )
105            ->where( 'user_type.id =
106                user_profile.user_type_id' )
107            ->from( 'user_profile , project ,
108                user_type' )
109            ->get();
110
111        if($query->num_rows() > 0)
112        {
113            return $query->result();
114        }
115    }
116
117    function insertNewProject($ projectName ,
118        $description , $startDate , $endDate)
119    {
120        $data = array(
121            'name' => $projectName ,
122            'description' => $description ,
123            'start_date' => $startDate ,
124            'end_date' => $endDate
125        );
126
127        $isSuccess = $this->db->insert('project' ,
128            $data);
129
130        if($isSuccess)
131        {
132            return $this->db->insert_id();
133        }
134    }
135
136    function updateProject($projectId ,
137        $productName , $description , $startDate ,
138        $endDate)
139    {
140        $data = array(
141            'name' => $productName ,
142            'description' => $description ,
143            'start_date' => $startDate ,
144            'end_date' => $endDate
145        );
146
147        $this->db->where('id' , $projectId );
148        $isSuccess = $this->db->update('project' ,
149            $data);
150
151        return $isSuccess;
152    }
153
154    function getStatus($projectId) {
155        $query = $this->db->query("Select end_date
156            from project where id ='$projectId'" );
157
158        if ($query->num_rows() > 0)
159        {
160            $endDate = $query->row()->end_date;
161        }
162    }

```

```

154     if($endDate != null)
155     {
156         if( strtotime($endDate) < strtotime(
157             now() ) )
158             return "Finished";
159         }
160     }
161     return "Ongoing";
162 }
163 else
164 {
165     return false;
166 }
167 }
168 }
169 function getAllProjects()
170 {
171     $query = $this->db->get('project');
172
173     if($query->num_rows() > 0)
174     {
175         return $query->result();
176     }
177     else
178     {
179         return false;
180     }
181 }
182 }
183 function getProjectIdOfUser($userId,
184     $userTypeId)
185 {
186     $query = $this->db->query("Select
187         user_profile.project_id from user_profile
188         where user_profile.user_id ='$userId'
189         and user_profile.user_type_id =
190             '$userTypeId'");
191
192     if($query->num_rows() > 0)
193     {
194         return $query->result();
195     }
196 }
197
198 function getProjectId($ projectName)
199 {
200     $query = $this->db
201             ->where('name', $projectName )
202             ->from('project')
203             ->limit(1)
204             ->get();
205
206     if($query->num_rows() > 0)
207     {
208         return $query->row()->id;
209     }
210     else
211     {
212         return false;
213     }
214 }
215
216 function getProjectWithId($projectId)
217 {
218     $query = $this->db
219             ->where('id', $projectId )
220             ->limit(1)
221             ->get('project');
222
223     if($query->num_rows() > 0)
224     {
225         return $query->row();
226     }
227     else
228     {
229         return false;
230     }
231 }
232
233 function getProject($projectId)
234 {
235     $query = $this->db
236             ->where('id', $projectId )
237             ->from('project')
238             ->limit(1)
239             ->get();
240
241     if($query->num_rows() > 0)
242     {
243         return $query->row();
244     }
245     else
246     {
247         return false;
248     }
249 }
250
251 function getProjectName($projectId)
252 {
253     $query = $this->db->query("Select name
254         from project where id ='$projectId'");
255
256     if($query->num_rows() > 0)
257     {
258         return $query->row()->name;
259     }
260     else
261     {
262         return false;
263     }
264 }
265
266 function getDescription($projectId)
267 {
268     $query = $this->db->query("Select
269         description from project where id =
270             '$projectId'");
271
272     if($query->num_rows() > 0)
273     {
274         return $query->row()->description;
275     }
276     else
277     {
278         return false;
279     }
280 }
281
282 function getStartDate($projectId)
283 {
284     $query = $this->db->query("Select
285         start_date from project where id =
286             '$projectId'");
287
288     if($query->num_rows() > 0)
289     {
290         return $query->row()->start_date;
291     }
292     else
293     {
294         return false;
295     }
296 }
297
298 function getEndDate($projectId)
299 {
300     $query = $this->db->query("Select end_date
301         from project where id ='$projectId'");
302
303     if($query->num_rows() > 0)
304     {
305         return $query->row()->end_date;
306     }
307     else
308     {
309         return false;
310     }
311 }
312
313 function getProjectHeadUserId($projectId)
314 {
315     $query = $this->db
316             ->where('project_id', $projectId )
317             ->where('user_type_id', 2 )
318             ->limit(1)
319             ->get('user_profile');
320
321     if($query->num_rows() > 0)
322     {
323         return $query->row()->user_id;
324     }
325     else
326     {
327         return false;
328     }
329 }
330
331 function getProjectHead($projectId)
332 {
333     $query = $this->db->select( 'user.id', user
334         .firstname, user.lastname )
335             ->from( "user_profile", user" )
336             ->where( "user_profile.project_id =
337                 '$projectId'" )
338             ->where( "user_profile.user_type_id =
339                 2" )
340             ->where( "user_profile.user_id = user.
341                 id" )
342             ->get();
343
344     if($query->num_rows() > 0)
345     {
346

```

```

336     return $query->result();
337 }
338 else
339 {
340     return false;
341 }
342 }
343 }
344 function getResearchers($projectId)
345 {
346     $query = $this->db->select('user.id', 'user
347         .firstname', 'user.lastname')
348         ->from('user_profile', 'user')
349         ->where('user_profile.project_id = ?',
350             $projectId)
351         ->where('user_profile.user_type_id = ?',
352             1)
353         ->where('user_profile.user_id = ?',
354             $id)
355         ->get();
356     if ($query->num_rows() > 0)
357     {
358         return $query->result();
359     }
360     return false;
361 }
362 }
363 function getProjectDetails($projectId,
364     $userId, $userTypeId)
365 {
366     $query = $this->db
367         ->select('project.name', 'project.
368             description', 'project.start_date', 'project.
369             end_date')
370         ->where('user_profile.user_id = ?',
371             $userId)
372         ->where('user_profile.project_id = ?',
373             $projectId)
374         ->where('user_profile.user_type_id = ?',
375             $userTypeId)
376         ->where('project.id = ?',
377             user_profile.project_id)
378         ->from('user_profile', 'project',
379             'user_type')
380         ->limit(1)
381         ->get();
382     if ($query->num_rows() > 0)
383     {
384         return $query->result();
385     }
386     return false;
387 }
388 }
389 
```

Listing 7: Projects.php

```

1 <?php
2 class Projects extends CI_Controller
3 {
4     private $userData;
5
6     function __construct()
7     {
8         parent::__construct();
9         $this->load->model('ProjectModel', '', TRUE);
10    $this->load->model('UserModel', '', TRUE);
11    $this->load->model('UserTypeModel', '', TRUE);
12    $this->load->model('SystemLogModel', '', TRUE);
13
14    $this->load->helper(array('form'));
15    $this->userData = $this->session->userdata
16        ('logged_in');
17
18    if( $this->userData == null )
19    {
20        redirect('authenticate/login');
21    }
22
23    function index()
24    {
25        $data['pageTitle'] = "Projects";
26        $data['pageHeader'] = "Project List";
27        $data['projects'] = $this->ProjectModel->
28            getAllProjects();
29
30        $this->load->view('projects/index', $data);
31    }
32
33    function create()
34    {
35        $data['username'] = $this->userData['
36            username'];
37        $data['firstname'] = $this->userData['
38            firstname'];
39        $data['fullname'] = $this->userData['
40            fullname'];
41        $userId = $this->userData['id'];
42
43        $data['pageTitle'] = "Projects";
44        $data['pageHeader'] = "New Project";
45
46        $data['users'] = $this->UserModel->
47            getAllUsersExceptSysAdmin();
48
49        $this->load->view('projects/create', $data);
50    }
51
52    function insert()
53    {
54        $this->load->helper(array('form'));
55        $data['username'] = $this->userData['
56            username'];
57        $data['firstname'] = $this->userData['
58            firstname'];
59        $data['fullname'] = $this->userData['
60            fullname'];
61
62        $data['pageTitle'] = "Projects";
63        $data['pageHeader'] = "Project List";
64
65        $data['researchers'] = $this->input->post(
66            'researchers');
67
68        $data['projectName'] = $this->input->post(
69            'projectName');
70        $data['description'] = $this->input->post(
71            'description');
72        $data['startDate'] = $this->input->post(
73            'startDate');
74        $data['endDate'] = $this->input->post(
75            'endDate');
76        $data['projectHeadUserId'] = $this->input->post(
77            'projectHead');
78        $data['projectHeadId'] = 2;
79        $data['researcherId'] = 1;
80
81        if(( $endDate > $startDate ) == true)
82        {
83            $this->ProjectModel->insertNewProject(
84                $data['projectName'],
85                $data['description'],
86                $data['startDate'],
87                $data['endDate']);
88
89            $log = 'added project ( ' . $data['projectName'] .
90            ')';
91            $this->submitSystemLog($log);
92
93            $projectId = $this->ProjectModel->
94                getProjectId($data['projectName']);
95            $checkResearchers = false;
96
97            foreach($this->input->post('researchers') as
98                $userId)
99            {
100                if($projectHeadUserId == $userId)
101                {
102                    $checkResearchers = true;
103                }
104            }
105            if($checkResearchers == false)
106            {
107                $this->UserModel->assignUserToProject(
108                    $data['projectHeadId'],
109                    $data['projectHeadUserId'],
110                    $projectId);
111
112                foreach($this->input->post('
113                    researchers') as $userId)
114                {
115                    $this->UserModel->
116                        assignUserToProject($researcherId,
117                            $userId, $projectId);
118                }
119
120                $data['message'] = array(
121                    'type' => 'success',
122                    'icon' => 'check',
123                    'text' => 'You have
124 successfully added a new project
125                );
126            }
127            else
128            {
129                $data['message'] = array(
130                    'type' => 'error',
131                    'icon' => 'ban',
132                    'text' => 'You have an
133 incorrect input'
134            }
135        }
136    }
137
138    function getProjectDetails($projectId,
139        $userId, $userTypeId)
140    {
141        $query = $this->db
142            ->select('project.name', 'project.
143                description', 'project.start_date', 'project.
144                end_date')
145            ->where('user_profile.user_id = ?',
146                $userId)
147            ->where('user_profile.project_id = ?',
148                $projectId)
149            ->where('user_profile.user_type_id = ?',
150                $userTypeId)
151            ->where('project.id = ?',
152                user_profile.project_id)
153            ->from('user_profile', 'project',
154                'user_type')
155            ->limit(1)
156            ->get();
157
158        if ($query->num_rows() > 0)
159        {
160            return $query->result();
161        }
162        return false;
163    }
164
165    function getResearchers($projectId)
166    {
167        $query = $this->db->select('user.id', 'user
168            .firstname', 'user.lastname')
169            ->from('user_profile', 'user')
170            ->where('user_profile.project_id = ?',
171                $projectId)
172            ->where('user_profile.user_type_id = ?',
173                1)
174            ->where('user_profile.user_id = ?',
175                $id)
176            ->get();
177
178        if ($query->num_rows() > 0)
179        {
180            return $query->result();
181        }
182        return false;
183    }
184
185    function getProjectDetails($projectId,
186        $userId, $userTypeId)
187    {
188        $query = $this->db
189            ->select('project.name', 'project.
190                description', 'project.start_date', 'project.
191                end_date')
192            ->where('user_profile.user_id = ?',
193                $userId)
194            ->where('user_profile.project_id = ?',
195                $projectId)
196            ->where('user_profile.user_type_id = ?',
197                $userTypeId)
198            ->where('project.id = ?',
199                user_profile.project_id)
200            ->from('user_profile', 'project',
201                'user_type')
202            ->limit(1)
203            ->get();
204
205        if ($query->num_rows() > 0)
206        {
207            return $query->result();
208        }
209        return false;
210    }
211
212    function insert()
213    {
214        $this->load->helper(array('form'));
215        $data['username'] = $this->userData['
216            username'];
217        $data['firstname'] = $this->userData['
218            firstname'];
219        $data['fullname'] = $this->userData['
220            fullname'];
221
222        $data['pageTitle'] = "Projects";
223        $data['pageHeader'] = "Project List";
224
225        $data['researchers'] = $this->input->post(
226            'researchers');
227
228        $data['projectName'] = $this->input->post(
229            'projectName');
230        $data['description'] = $this->input->post(
231            'description');
232        $data['startDate'] = $this->input->post(
233            'startDate');
234        $data['endDate'] = $this->input->post(
235            'endDate');
236        $data['projectHeadUserId'] = $this->input->post(
237            'projectHead');
238        $data['projectHeadId'] = 2;
239        $data['researcherId'] = 1;
240
241        if(( $endDate > $startDate ) == true)
242        {
243            $this->ProjectModel->insertNewProject(
244                $data['projectName'],
245                $data['description'],
246                $data['startDate'],
247                $data['endDate']);
248
249            $log = 'added project ( ' . $data['projectName'] .
250            ')';
251            $this->submitSystemLog($log);
252
253            $projectId = $this->ProjectModel->
254                getProjectId($data['projectName']);
255            $checkResearchers = false;
256
257            foreach($this->input->post('researchers') as
258                $userId)
259            {
260                if($projectHeadUserId == $userId)
261                {
262                    $checkResearchers = true;
263                }
264            }
265            if($checkResearchers == false)
266            {
267                $this->UserModel->assignUserToProject(
268                    $data['projectHeadId'],
269                    $data['projectHeadUserId'],
270                    $projectId);
271
272                foreach($this->input->post('
273                    researchers') as $userId)
274                {
275                    $this->UserModel->
276                        assignUserToProject($researcherId,
277                            $userId, $projectId);
278                }
279
280                $data['message'] = array(
281                    'type' => 'success',
282                    'icon' => 'check',
283                    'text' => 'You have
284 successfully added a new project
285                );
286            }
287            else
288            {
289                $data['message'] = array(
290                    'type' => 'error',
291                    'icon' => 'ban',
292                    'text' => 'You have an
293 incorrect input'
294            }
295        }
296    }
297
298    function getProjectDetails($projectId,
299        $userId, $userTypeId)
300    {
301        $query = $this->db
302            ->select('project.name', 'project.
303                description', 'project.start_date', 'project.
304                end_date')
305            ->where('user_profile.user_id = ?',
306                $userId)
307            ->where('user_profile.project_id = ?',
308                $projectId)
309            ->where('user_profile.user_type_id = ?',
310                $userTypeId)
311            ->where('project.id = ?',
312                user_profile.project_id)
313            ->from('user_profile', 'project',
314                'user_type')
315            ->limit(1)
316            ->get();
317
318        if ($query->num_rows() > 0)
319        {
320            return $query->result();
321        }
322        return false;
323    }
324
325    function getResearchers($projectId)
326    {
327        $query = $this->db->select('user.id', 'user
328            .firstname', 'user.lastname')
329            ->from('user_profile', 'user')
330            ->where('user_profile.project_id = ?',
331                $projectId)
332            ->where('user_profile.user_type_id = ?',
333                1)
334            ->where('user_profile.user_id = ?',
335                $id)
336            ->get();
337
338        if ($query->num_rows() > 0)
339        {
340            return $query->result();
341        }
342        return false;
343    }
344
345    function getProjectDetails($projectId,
346        $userId, $userTypeId)
347    {
348        $query = $this->db
349            ->select('project.name', 'project.
350                description', 'project.start_date', 'project.
351                end_date')
352            ->where('user_profile.user_id = ?',
353                $userId)
354            ->where('user_profile.project_id = ?',
355                $projectId)
356            ->where('user_profile.user_type_id = ?',
357                $userTypeId)
358            ->where('project.id = ?',
359                user_profile.project_id)
360            ->from('user_profile', 'project',
361                'user_type')
362            ->limit(1)
363            ->get();
364
365        if ($query->num_rows() > 0)
366        {
367            return $query->result();
368        }
369        return false;
370    }
371
372    function insert()
373    {
374        $this->load->helper(array('form'));
375        $data['username'] = $this->userData['
376            username'];
377        $data['firstname'] = $this->userData['
378            firstname'];
379        $data['fullname'] = $this->userData['
380            fullname'];
381
382        $data['pageTitle'] = "Projects";
383        $data['pageHeader'] = "Project List";
384
385        $data['researchers'] = $this->input->post(
386            'researchers');
387
388        $data['projectName'] = $this->input->post(
389            'projectName');
390        $data['description'] = $this->input->post(
391            'description');
392        $data['startDate'] = $this->input->post(
393            'startDate');
394        $data['endDate'] = $this->input->post(
395            'endDate');
396        $data['projectHeadUserId'] = $this->input->post(
397            'projectHead');
398        $data['projectHeadId'] = 2;
399        $data['researcherId'] = 1;
400
401        if(( $endDate > $startDate ) == true)
402        {
403            $this->ProjectModel->insertNewProject(
404                $data['projectName'],
405                $data['description'],
406                $data['startDate'],
407                $data['endDate']);
408
409            $log = 'added project ( ' . $data['projectName'] .
410            ')';
411            $this->submitSystemLog($log);
412
413            $projectId = $this->ProjectModel->
414                getProjectId($data['projectName']);
415            $checkResearchers = false;
416
417            foreach($this->input->post('researchers') as
418                $userId)
419            {
420                if($projectHeadUserId == $userId)
421                {
422                    $checkResearchers = true;
423                }
424            }
425            if($checkResearchers == false)
426            {
427                $this->UserModel->assignUserToProject(
428                    $data['projectHeadId'],
429                    $data['projectHeadUserId'],
430                    $projectId);
431
432                foreach($this->input->post('
433                    researchers') as $userId)
434                {
435                    $this->UserModel->
436                        assignUserToProject($researcherId,
437                            $userId, $projectId);
438                }
439
440                $data['message'] = array(
441                    'type' => 'success',
442                    'icon' => 'check',
443                    'text' => 'You have
444 successfully added a new project
445                );
446            }
447            else
448            {
449                $data['message'] = array(
450                    'type' => 'error',
451                    'icon' => 'ban',
452                    'text' => 'You have an
453 incorrect input'
454            }
455        }
456    }
457
458    function getProjectDetails($projectId,
459        $userId, $userTypeId)
460    {
461        $query = $this->db
462            ->select('project.name', 'project.
463                description', 'project.start_date', 'project.
464                end_date')
465            ->where('user_profile.user_id = ?',
466                $userId)
467            ->where('user_profile.project_id = ?',
468                $projectId)
469            ->where('user_profile.user_type_id = ?',
470                $userTypeId)
471            ->where('project.id = ?',
472                user_profile.project_id)
473            ->from('user_profile', 'project',
474                'user_type')
475            ->limit(1)
476            ->get();
477
478        if ($query->num_rows() > 0)
479        {
480            return $query->result();
481        }
482        return false;
483    }
484
485    function getResearchers($projectId)
486    {
487        $query = $this->db->select('user.id', 'user
488            .firstname', 'user.lastname')
489            ->from('user_profile', 'user')
490            ->where('user_profile.project_id = ?',
491                $projectId)
492            ->where('user_profile.user_type_id = ?',
493                1)
494            ->where('user_profile.user_id = ?',
495                $id)
496            ->get();
497
498        if ($query->num_rows() > 0)
499        {
500            return $query->result();
501        }
502        return false;
503    }
504
505    function getProjectDetails($projectId,
506        $userId, $userTypeId)
507    {
508        $query = $this->db
509            ->select('project.name', 'project.
510                description', 'project.start_date', 'project.
511                end_date')
512            ->where('user_profile.user_id = ?',
513                $userId)
514            ->where('user_profile.project_id = ?',
515                $projectId)
516            ->where('user_profile.user_type_id = ?',
517                $userTypeId)
518            ->where('project.id = ?',
519                user_profile.project_id)
520            ->from('user_profile', 'project',
521                'user_type')
522            ->limit(1)
523            ->get();
524
525        if ($query->num_rows() > 0)
526        {
527            return $query->result();
528        }
529        return false;
530    }
531
532    function insert()
533    {
534        $this->load->helper(array('form'));
535        $data['username'] = $this->userData['
536            username'];
537        $data['firstname'] = $this->userData['
538            firstname'];
539        $data['fullname'] = $this->userData['
540            fullname'];
541
542        $data['pageTitle'] = "Projects";
543        $data['pageHeader'] = "Project List";
544
545        $data['researchers'] = $this->input->post(
546            'researchers');
547
548        $data['projectName'] = $this->input->post(
549            'projectName');
550        $data['description'] = $this->input->post(
551            'description');
552        $data['startDate'] = $this->input->post(
553            'startDate');
554        $data['endDate'] = $this->input->post(
555            'endDate');
556        $data['projectHeadUserId'] = $this->input->post(
557            'projectHead');
558        $data['projectHeadId'] = 2;
559        $data['researcherId'] = 1;
560
561        if(( $endDate > $startDate ) == true)
562        {
563            $this->ProjectModel->insertNewProject(
564                $data['projectName'],
565                $data['description'],
566                $data['startDate'],
567                $data['endDate']);
568
569            $log = 'added project ( ' . $data['projectName'] .
570            ')';
571            $this->submitSystemLog($log);
572
573            $projectId = $this->ProjectModel->
574                getProjectId($data['projectName']);
575            $checkResearchers = false;
576
577            foreach($this->input->post('researchers') as
578                $userId)
579            {
580                if($projectHeadUserId == $userId)
581                {
582                    $checkResearchers = true;
583                }
584            }
585            if($checkResearchers == false)
586            {
587                $this->UserModel->assignUserToProject(
588                    $data['projectHeadId'],
589                    $data['projectHeadUserId'],
590                    $projectId);
591
592                foreach($this->input->post('
593                    researchers') as $userId)
594                {
595                    $this->UserModel->
596                        assignUserToProject($researcherId,
597                            $userId, $projectId);
598                }
599
600                $data['message'] = array(
601                    'type' => 'success',
602                    'icon' => 'check',
603                    'text' => 'You have
604 successfully added a new project
605                );
606            }
607            else
608            {
609                $data['message'] = array(
610                    'type' => 'error',
611                    'icon' => 'ban',
612                    'text' => 'You have an
613 incorrect input'
614            }
615        }
616    }
617
618    function getProjectDetails($projectId,
619        $userId, $userTypeId)
620    {
621        $query = $this->db
622            ->select('project.name', 'project.
623                description', 'project.start_date', 'project.
624                end_date')
625            ->where('user_profile.user_id = ?',
626                $userId)
627            ->where('user_profile.project_id = ?',
628                $projectId)
629            ->where('user_profile.user_type_id = ?',
630                $userTypeId)
631            ->where('project.id = ?',
632                user_profile.project_id)
633            ->from('user_profile', 'project',
634                'user_type')
635            ->limit(1)
636            ->get();
637
638        if ($query->num_rows() > 0)
639        {
640            return $query->result();
641        }
642        return false;
643    }
644
645    function getResearchers($projectId)
646    {
647        $query = $this->db->select('user.id', 'user
648            .firstname', 'user.lastname')
649            ->from('user_profile', 'user')
650            ->where('user_profile.project_id = ?',
651                $projectId)
652            ->where('user_profile.user_type_id = ?',
653                1)
654            ->where('user_profile.user_id = ?',
655                $id)
656            ->get();
657
658        if ($query->num_rows() > 0)
659        {
660            return $query->result();
661        }
662        return false;
663    }
664
665    function getProjectDetails($projectId,
666        $userId, $userTypeId)
667    {
668        $query = $this->db
669            ->select('project.name', 'project.
670                description', 'project.start_date', 'project.
671                end_date')
672            ->where('user_profile.user_id = ?',
673                $userId)
674            ->where('user_profile.project_id = ?',
675                $projectId)
676            ->where('user_profile.user_type_id = ?',
677                $userTypeId)
678            ->where('project.id = ?',
679                user_profile.project_id)
680            ->from('user_profile', 'project',
681                'user_type')
682            ->limit(1)
683            ->get();
684
685        if ($query->num_rows() > 0)
686        {
687            return $query->result();
688        }
689        return false;
690    }
691
692    function insert()
693    {
694        $this->load->helper(array('form'));
695        $data['username'] = $this->userData['
696            username'];
697        $data['firstname'] = $this->userData['
698            firstname'];
699        $data['fullname'] = $this->userData['
700            fullname'];
701
702        $data['pageTitle'] = "Projects";
703        $data['pageHeader'] = "Project List";
704
705        $data['researchers'] = $this->input->post(
706            'researchers');
707
708        $data['projectName'] = $this->input->post(
709            'projectName');
710        $data['description'] = $this->input->post(
711            'description');
712        $data['startDate'] = $this->input->post(
713            'startDate');
714        $data['endDate'] = $this->input->post(
715            'endDate');
716        $data['projectHeadUserId'] = $this->input->post(
717            'projectHead');
718        $data['projectHeadId'] = 2;
719        $data['researcherId'] = 1;
720
721        if(( $endDate > $startDate ) == true)
722        {
723            $this->ProjectModel->insertNewProject(
724                $data['projectName'],
725                $data['description'],
726                $data['startDate'],
727                $data['endDate']);
728
729            $log = 'added project ( ' . $data['projectName'] .
730            ')';
731            $this->submitSystemLog($log);
732
733            $projectId = $this->ProjectModel->
734                getProjectId($data['projectName']);
735            $checkResearchers = false;
736
737            foreach($this->input->post('researchers') as
738                $userId)
739            {
740                if($projectHeadUserId == $userId)
741                {
742                    $checkResearchers = true;
743                }
744            }
745            if($checkResearchers == false)
746            {
747                $this->UserModel->assignUserToProject(
748                    $data['projectHeadId'],
749                    $data['projectHeadUserId'],
750                    $projectId);
751
752                foreach($this->input->post('
753                    researchers') as $userId)
754                {
755                    $this->UserModel->
756                        assignUserToProject($researcherId,
757                            $userId, $projectId);
758                }
759
760                $data['message'] = array(
761                    'type' => 'success',
762                    'icon' => 'check',
763                    'text' => 'You have
764 successfully added a new project
765                );
766            }
767            else
768            {
769                $data['message'] = array(
770                    'type' => 'error',
771                    'icon' => 'ban',
772                    'text' => 'You have an
773 incorrect input'
774            }
775        }
776    }
777
778    function getProjectDetails($projectId,
779        $userId, $userTypeId)
780    {
781        $query = $this->db
782            ->select('project.name', 'project.
783                description', 'project.start_date', 'project.
784                end_date')
785            ->where('user_profile.user_id = ?',
786                $userId)
787            ->where('user_profile.project_id = ?',
788                $projectId)
789            ->where('user_profile.user_type_id = ?',
790                $userTypeId)
791            ->where('project.id = ?',
792                user_profile.project_id)
793            ->from('user_profile', 'project',
794                'user_type')
795            ->limit(1)
796            ->get();
797
798        if ($query->num_rows() > 0)
799        {
800            return $query->result();
801        }
802        return false;
803    }
804
805    function getResearchers($projectId)
806    {
807        $query = $this->db->select('user.id', 'user
808            .firstname', 'user.lastname')
809            ->from('user_profile', 'user')
810            ->where('user_profile.project_id = ?',
811                $projectId)
812            ->where('user_profile.user_type_id = ?',
813                1)
814            ->where('user_profile.user_id = ?',
815                $id)
816            ->get();
817
818        if ($query->num_rows() > 0)
819        {
820            return $query->result();
821        }
822        return false;
823    }
824
825    function getProjectDetails($projectId,
826        $userId, $userTypeId)
827    {
828        $query = $this->db
829            ->select('project.name', 'project.
830                description', 'project.start_date', 'project.
831                end_date')
832            ->where('user_profile.user_id = ?',
833                $userId)
834            ->where('user_profile.project_id = ?',
835                $projectId)
836            ->where('user_profile.user_type_id = ?',
837                $userTypeId)
838            ->where('project.id = ?',
839                user_profile.project_id)
840            ->from('user_profile', 'project',
841                'user_type')
842            ->limit(1)
843            ->get();
844
845        if ($query->num_rows() > 0)
846        {
847            return $query->result();
848        }
849        return false;
850    }
851
852    function insert()
853    {
854        $this->load->helper(array('form'));
855        $data['username'] = $this->userData['
856            username'];
857        $data['firstname'] = $this->userData['
858            firstname'];
859        $data['fullname'] = $this->userData['
860            fullname'];
861
862        $data['pageTitle'] = "Projects";
863        $data['pageHeader'] = "Project List";
864
865        $data['researchers'] = $this->input->post(
866            'researchers');
867
868        $data['projectName'] = $this->input->post(
869            'projectName');
870        $data['description'] = $this->input->post(
871            'description');
872        $data['startDate'] = $this->input->post(
873            'startDate');
874        $data['endDate'] = $this->input->post(
875            'endDate');
876        $data['projectHeadUserId'] = $this->input->post(
877            'projectHead');
878        $data['projectHeadId'] = 2;
879        $data['researcherId'] = 1;
880
881        if(( $endDate > $startDate ) == true)
882        {
883            $this->ProjectModel->insertNewProject(
884                $data['projectName'],
885                $data['description'],
886                $data['startDate'],
887                $data['endDate']);
888
889            $log = 'added project ( ' . $data['projectName'] .
890            ')';
891            $this->submitSystemLog($log);
892
893            $projectId = $this->ProjectModel->
894                getProjectId($data['projectName']);
895            $checkResearchers = false;
896
897            foreach($this->input->post('researchers') as
898                $userId)
899            {
900                if($projectHeadUserId == $userId)
901                {
902                    $checkResearchers = true;
903                }
904            }
905            if($checkResearchers == false)
906            {
907                $this->UserModel->assignUserToProject(
908                    $data['projectHeadId'],
909                    $data['projectHeadUserId'],
910                    $projectId);
911
912                foreach($this->input->post('
913                    researchers') as $userId)
914                {
915                    $this->UserModel->
916                        assignUserToProject($researcherId,
917                            $userId, $projectId);
918                }
919
920                $data['message'] = array(
921                    'type' => 'success',
922                    'icon' => 'check',
923                    'text' => 'You have
924 successfully added a new project
925                );
926            }
927            else
928            {
929                $data['message'] = array(
930                    'type' => 'error',
931                    'icon' => 'ban',
932                    'text' => 'You have an
933 incorrect input'
934            }
935        }
936    }
937
938    function getProjectDetails($projectId,
939        $userId, $userTypeId)
940    {
941        $query = $this->db
942            ->select('project.name', 'project.
943                description', 'project.start_date', 'project.
944                end_date')
945            ->where('user_profile.user_id = ?',
946                $userId)
947            ->where('user_profile.project_id = ?',
948                $projectId)
949            ->where('user_profile.user_type_id = ?',
950                $userTypeId)
951            ->where('project.id = ?',
952                user_profile.project_id)
953            ->from('user_profile', 'project',
954                'user_type')
955            ->limit(1)
956            ->get();
957
958        if ($query->num_rows() > 0)
959        {
960            return $query->result();
961        }
962        return false;
963    }
964
965    function getResearchers($projectId)
966    {
967        $query = $this->db->select('user.id', 'user
968            .firstname', 'user.lastname')
969            ->from('user_profile', 'user')
970            ->where('user_profile.project_id = ?',
971                $projectId)
972            ->where('user_profile.user_type_id = ?',
973                1)
974            ->where('user_profile.user_id = ?',
975                $id)
976            ->get();
977
978        if ($query->num_rows() > 0)
979        {
980            return $query->result();
981        }
982        return false;
983    }
984
985    function getProjectDetails($projectId,
986        $userId, $userTypeId)
987    {
988        $query = $this->db
989            ->select('project.name', 'project.
990                description', 'project.start_date', 'project.
991                end_date')
992            ->where('user_profile.user_id = ?',
993                $userId)
994            ->where('user_profile.project_id = ?',
995                $projectId)
996            ->where('user_profile.user_type_id = ?',
997                $userTypeId)
998            ->where('project.id = ?',
999                user_profile.project_id)
100            ->from('user_profile', 'project',
101                'user_type')
102            ->limit(1)
103            ->get();
104
105        if ($query->num_rows() > 0)
106        {
107            return $query->result();
108        }
109        return false;
110    }
111
112    function insert()
113    {
114        $this->load->helper(array('form'));
115        $data['username'] = $this->userData['
116            username'];
117        $data['firstname'] = $this->userData['
118            firstname'];
119        $
```

```

102         );
103     }
104   }  

105 else
106 {
107   $data[ 'message' ] = array(
108     'type' => 'error',
109     'icon' => 'ban',
110     'text' => 'You have an incorrect  

111       input. The end date should be after the  

112       start date.'
113   );
114   $data[ 'users' ] = $this->UserModel->  

115   getAllUsersExceptSysAdmin();
116   $data[ 'projects' ] = $this->ProjectModel->  

117   getAllProjects();
118   $this->load->view( 'projects/create' , $data );
119 }
120  

121 function edit( $projectId )
122 {
123   $this->load->helper( array( 'form' ) );
124   $data[ 'username' ] = $this->userData[ ,
125   'username' ];
126   $data[ 'firstname' ] = $this->userData[ ,
127   'firstname' ];
128   $data[ 'fullname' ] = $this->userData[ ,
129   'fullname' ];
130   $userId = $this->userData[ 'id' ];
131   $data[ 'user' ] = $this->UserModel->  

132   getUserId( 1 );
133  

134   $data[ 'pageTitle' ] = "Projects";
135   $data[ 'pageHeader' ] = "Edit Project";
136  

137   $data[ 'users' ] = $this->UserModel->  

138   getAllUsersExceptSysAdmin();
139   $data[ 'project' ] = $this->ProjectModel->  

140   getProjectWithId( $projectId );
141   $data[ 'projectHeadUserId' ] = $this->  

142   ProjectModel->getProjectHeadUserId( $projectId );
143   $data[ 'researchers' ] = $this->ProjectModel->  

144   getResearchers( $projectId );
145  

146   $this->load->view( 'projects/edit' , $data );
147 }
148  

149 function update()
150 {
151   $this->load->helper( array( 'form' ) );
152   $data[ 'username' ] = $this->userData[ ,
153   'username' ];
154   $data[ 'firstname' ] = $this->userData[ ,
155   'firstname' ];
156   $data[ 'fullname' ] = $this->userData[ ,
157   'fullname' ];
158   $userId = $this->userData[ 'id' ];
159   $data[ 'user' ] = $this->UserModel->  

160   getUserId( 1 );
161  

162   $data[ 'pageTitle' ] = "Projects";
163   $data[ 'pageHeader' ] = "Edit Project";
164  

165   $data[ 'users' ] = $this->UserModel->  

166   getAllUsersExceptSysAdmin();
167   $data[ 'project' ] = $this->ProjectModel->  

168   getProjectWithId( $projectId );
169   $data[ 'projectHeadUserId' ] = $this->  

170   ProjectModel->getProjectHeadUserId( $projectId );
171   $data[ 'researchers' ] = $this->ProjectModel->  

172   getResearchers( $projectId );
173  

174   $this->load->view( 'projects/edit' , $data );
175 }
176  

177  

178 function submitSystemLog( $log )
179 {
180   date_default_timezone_set( 'Asia/Manila' );
181   $datestring = "%Y-%m-%d %h:%i:%s";
182   $timestamp = mdate( $datestring , time() );
183  

184   $this->SystemLogModel->insertSystemLog(
185   $timestamp , $log , $this->userData[ 'id' ] );
186 }
187  

188  

189  

190  

191  

192  

193  

194  

195  

196  

197  

198  

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200  

201  

202  

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206  

207  

208  

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210  

211  

212  

213  

214  

215  

216  

217  

218  

219  

220  

221 }

```

Listing 8: Reports.php

```

1 <?php
2 class Reports extends CI_Controller
3 {
4   private $userData;
5
6   function __construct()
7   {
8     parent::__construct();
9     $this->load->model( 'ReportsModel' , '' , TRUE );
10    $this->load->model( 'SpecimenTypeModel' , '' , TRUE );
11    $this->load->helper( 'date' );
12
13   $this->userData = $this->session->userdata
14   ( 'logged_in' );
15
16   if( $this->userData == null )
17   {
18     redirect( 'authenticate/login' );
19   }
20
21   function index()
22   {
23     date_default_timezone_set( 'Asia/Manila' );
24     $datestring = "%Y-%m-%d %h:%i:%s";
25     $timestamp = mdate( $datestring , time() );
26

```

```

27 $data['pageTitle'] = "";
28 $data['pageHeader'] = "";
29
30
31 $count = [];
32 $data['types'] = $this->SpecimenTypeModel
->getAllSpecimenTypes();
33
34 foreach($data['types'] as $row)
35 {
36     $c = $this->ReportsModel->
37     getCountWithSpecimenType($row->id, $this
->userData['projectId']);
38     array_push($count, $c);
39 }
40 $data['counts'] = $count;
41 $this->load->view('reports/index', $data);
42
43 function pdf()
44 {
45     $count = [];
46     $data['types'] = $this->SpecimenTypeModel
->getAllSpecimenTypes();
47
48     foreach($data['types'] as $row)
49     {
50         $c = $this->ReportsModel->
51         getCountWithSpecimenType($row->id, $this
->userData['projectId']);
52         array_push($count, $c);
53     }
54     $data['counts'] = $count;
55     $datestring = "%Y-%m-%d %h:%i:%s";
56     $timestamp2 = mdate($datestring, time());
57
58     $filename = "report". $timestamp2;
59     $pdfFilePath = FCPATH."downloads/reports/
$filename.pdf";
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90 ?>

```

Listing 9: ReportsModel.php

```
1 <?php
2 class ReportsModel extends CI_Model
3 {
4     function __construct()
5     {
6         parent::__construct();
7     }
8
9     function getCountWithSpecimenType($typeId,
10        $projectId)
11    {
12        $query = $this->db
13            ->from('sample')
14            ->join('project_has_sample', 'project_has_sample.sample_id = sample.id',
15                )
16            ->where('sample.specimen_type_id' ,
17                $typeId)
18            ->where('project_has_sample.
19        projectId' , $projectId)
20            ->count_all_results();
21        return $query;
22    }
23
24    function getCountOfTestDonePerSample($testId
25        , $sampleId , $projectId)
26    {
27        $query = $this->db
28            ->from('sample_has_test')
29            ->where('sample_has_test.test_id' ,
30                $testId)
31            ->where('sample_has_test.sample_id'
32                , $sampleId)
33            ->where('sample_has_test.
34        projectId' , $projectId)
35            ->count_all_results();
36        return $query;
37    }
38
39    function getCountOfTestPerMonth($testId ,
40        $month , $projectId)
41    {
42        $query = $this->db
43            ->from('sample_has_test')
44            ->where('sample_has_test.test_id' ,
45                $testId)
46            ->where('sample_has_test.sample_id'
47                , $sampleId)
48            ->where('sample_has_test.
49        projectId' , $projectId)
50            ->count_all_results();
51        return $query;
52    }
53
54    function getCountOfTestDonePerMonth($testId ,
55        $month , $projectId)
56    {
57        $query = $this->db
58            ->from('sample_has_test')
59            ->where('sample_has_test.test_id' ,
60                $testId)
61            ->where('sample_has_test.sample_id'
62                , $sampleId)
63            ->where('sample_has_test.
64        projectId' , $projectId)
65        =>
```

Listing 10: SampleModel.php

```
1 <?php
2 class SampleModel extends CI_Model
3 {
4     function __construct()
5     {
6         parent::__construct();
7     }
8
9     function getAllSamples()
10    {
```

```

        ->from('sample_has_test')
        ->where('sample_has_test.test_id', $testId)
        ->where('MONTH(sample_has_test.timestamp)', $month)
        ->where('sample_has_test.project_id', $projectId)
        ->count_all_results();
    return $query;
}

function getCountOfTestPerYear($testId, $year, $projectId)
{
    $query = $this->db
        ->from('sample_has_test')
        ->where('sample_has_test.test_id', $testId)
        ->where('YEAR(sample_has_test.timestamp)', $year)
        ->where('sample_has_test.project_id', $projectId)
        ->count_all_results();
    return $query;
}

function getCountOfTestPerMonthYear($testId, $month, $year, $projectId)
{
    $query = $this->db
        ->from('sample_has_test')
        ->where('sample_has_test.test_id', $testId)
        ->where('MONTH(sample_has_test.timestamp)', $month)
        ->where('YEAR(sample_has_test.timestamp)', $year)
        ->where('sample_has_test.project_id', $projectId)
        ->count_all_results();
    return $query;
}

```

```
11 $query = $this->db->get('sample');
12
13 if($query->num_rows() > 0)
14 {
15     return $query->result();
16 }
17 else
18 {
19     return false;
20 }
21 }
```

```

22     function getSamplesOfUser($userId)
23     {
24         $this->db->select("user_profile.project_id")
25             );
26         $this->db->where("user.id = 95
27             project_has_sample.sample_id");
28     }
29     function getSamples($userId, $userTypeId) 97
30     {
31         $this->db->select("project.name, sample.id98
32             , sample.barcode, sample.collection_date,
33             sample.current_volume");
34         $this->db->from("project, sample,
35             project_has_sample, user_profile");
36         $this->db->where("user_profile.user_id #01
37             '$userId'");
38         $this->db->where("user_profile.
39             user_type_id = '$userTypeId'");
40         $this->db->where("user_profile.
41             project_id = project_has_sample.
42             project_id");
43         $this->db->where("project_has_sample.
44             project_id = project.id");
45         $this->db->where("project_has_sample.
46             sample_id = sample.id");
47         $query = $this->db->get();
48     }
49     if($query->num_rows() > 0)
50     {
51         return $query->result();
52     }
53     else
54     {
55         return false;
56     }
57 }
58     function getSamplesOfProject($projectId) 124
59     {
60         $this->db->select("project.name, sample.id27
61             , sample.barcode, sample.collection_date 128
62             , sample.current_volume, specimen_type.
63             name as sname");
64         $this->db->from("project, sample,
65             project_has_sample, specimen_type");
66         $this->db->where("project_has_sample.
67             project_id = '$projectId'");
68         $this->db->where("project_has_sample.
69             project_id = project.id");
70         $this->db->where("sample.id =
71             $sampleId");
72     }
73     $this->db->select("project.id, project.
74             name as pname");
75     $this->db->where("sample.id = $sampleId");
76     $this->db->where("project_has_sample.
77             sample_id = $sampleId");
78     $this->db->where("project_has_sample.
79             project_id != $projectId");
80     $this->db->where("project_has_sample.
81             project_id = project.id");
82     $this->db->from("sample, project,
83             project_has_sample");
84     $query = $this->db->get();
85     if($query->num_rows() > 0)
86     {
87         return $query->result();
88     }
89 }
90     function getSampleInformation($sampleId,
91             $projectId)
92     {
93         $this->db->select("sample.id, sample.
94             barcode, sample.collection_date, sample.
95             original_volume, sample.current_volume,
96             specimen_type.name as sname");
97         $this->db->where("sample.id = $sampleId");
98         $this->db->where("sample.
99             specimen_type_id = specimen_type.id");
100        $this->db->where("project_has_sample.
101            sample_id = $sampleId");
102        $this->db->where("project_has_sample.
103            project_id = $projectId");
104        $this->db->where("project_has_sample.
105            project_id = project.id");
106        $this->db->from("sample, specimen_type,
107             project, project_has_sample");
108        $query = $this->db->get();
109    }
110    if($query->num_rows() > 0)
111    {
112        return $query->row();
113    }
114    else
115    {
116        return false;
117    }
118 }
119     function getSampleBarcode($sampleId) 122
120     {
121         $query = $this->db
122             ->where('id', $sampleId)
123             ->from('sample')
124             ->limit(1)
125             ->get();
126     }
127     if($query->num_rows() > 0)
128     {
129         return $query->row()->barcode;
130     }
131     else
132     {
133         return false;
134     }
135 }
136     function getSampleId($barcode) 142
137     {
138         $query = $this->db
139             ->where('barcode', $barcode)
140             ->limit(1)
141             ->get('sample');
142     }
143     if($query->num_rows() > 0)
144     {
145         return $query->row()->id;
146     }
147     else
148     {
149         return false;
150     }
151 }
152     function insertNewSample($barcode,
153             $collectionDate, $originalVolume,
154             $currentVolume, $specimenTypeId,
155             $sourceId, $slotId) 143
156     {
157         $data = array(
158             'barcode' => $barcode,
159             'collection_date' => $collectionDate,
160             'original_volume' => $originalVolume,
161             'current_volume' => $currentVolume,
162             'specimen_type_id' => $specimenTypeId,
163             'source_id' => $sourceId,
164             'slot_id' => $slotId
165         );
166         $isSuccess = $this->db->insert('sample',
167             $data);
168         if($isSuccess)
169         {
170             return $this->db->insert_id();
171         }
172         return false;
173     }
174 }
175     function logAccess($sampleId, $testId,
176             $timestamp, $amount, $userId, $projectId) 169
177     {
178         $data = array(
179             'sample_id' => $sampleId,
180             'test_id' => $testId,
181             'timestamp' => $timestamp,
182             'amount' => $amount,
183             'user_id' => $userId,
184             'project_id' => $projectId
185         );

```



Listing 11: SingleProject.php

```

1 <?php
2 class SingleProject extends CI_Controller
3 {
4     private $userData;
5
6     function __construct()
7     {
8         parent::__construct();
9         $this->load->model('ProjectModel', '', TRUE);
10        $this->load->model('UserModel', '', TRUE);
11        $this->load->model('UserTypeModel', '', TRUE);
12        $this->load->model('SystemLogModel', '', TRUE);
13
14        $this->load->helper(array('form'));
15        $this->userData = $this->session->userdata('logged_in');
16
17        if( $this->userData == null )
18        {
19            redirect('authenticate/login');
20        }
21    }
22
23    function start($projectId, $userTypeId)
24    {
25        $this->userData['projectId'] = $projectId;
26        $this->userData['userTypeId'] =
27            $userTypeId;
28        $this->userData['projectName'] = $this->
29            ProjectModel->getProjectName($projectId);
30        $this->userData['userType'] = $this->
31            UserTypeModel->getUserType($userTypeId);
32
33        $this->session->set_userdata('logged_in',
34            $this->userData);
35        $this->index();
36
37    function index()
38    {
39        $data['pageTitle'] = "Project";
40        $data['pageHeader'] = "View Project";
41
42        $data['project'] = $this->ProjectModel->
43            getProject($this->userData['projectId']);
44        $data['researchers'] = $this->ProjectModel->
45            getResearchers($this->userData['
46            projectId']);
47        $data['projectHead'] = $this->ProjectModel->
48            getProjectHead($this->userData['
49            projectId']);
50
51        $this->load->view('singleproject/index',
52            $data);
53    }
54
55    function edit()
56    {
57        $this->load->helper(array('form'));
58        $data['pageTitle'] = "Project";
59        $data['pageHeader'] = "Edit Project";
60
61        $data['users'] = $this->UserModel->
62            getAllUsersExceptSysAdmin();
63        $data['project'] = $this->ProjectModel->
64            getProject($this->userData['projectId']);
65        $data['projectHeadUserId'] = $this->
66            ProjectModel->getProjectHeadUserId($this->
67            userData['projectId']);
68        $data['researchers'] = $this->ProjectModel->
69            getResearchers($this->userData['
70            projectId']);
71
72        $this->load->view('singleproject/edit',
73            $data);
74    }
75
76}
77
78
```

```

function update()
{
    $this->load->helper(array('form'));
    $data['pageTitle'] = "Project";
    $data['pageHeader'] = "View Project";

    $ projectName = $this->input->post('
    projectName');
    $description = $this->input->post('
    description');
    $startDate = $this->input->post('startDate
    ');
    $endDate = $this->input->post('endDate');

    if( ($this->ProjectModel->getProjectId(
    $projectName) == false) || ($this->
    ProjectModel->getProjectId($projectName)
    == $this->userData['projectId']) )
    {
        if($this->ProjectModel->updateProject(
        $this->userData['projectId'],
        $projectName, $description, $startDate,
        $endDate) != false)
        {
            $log = 'updated project ( .
        $projectName. )';
            $this->submitSystemLog($log);

            $data['message'] = 'The project is
            successfully updated';
            $data['pageTitle'] = "Project";
            $data['pageHeader'] = "View Project";

            $data['project'] = $this->ProjectModel
            ->getProject($this->userData['projectId'
            ]);
            $data['researchers'] = $this->
            ProjectModel->getResearchers($this->
            userData['projectId']);
            $data['projectHead'] = $this->
            ProjectModel->getProjectHead($this->
            userData['projectId']);

            $this->load->view('singleproject/index
            ', $data);
        }
    }
    else
    {
        $data['message'] = 'The project name is
        not available. Please enter another
        project name.';
        $data['pageTitle'] = "Project";
        $data['pageHeader'] = "Edit Project";

        $data['users'] = $this->UserModel->
        getAllUsersExceptSysAdmin();
        $data['project'] = $this->ProjectModel->
        getProject($this->userData['projectId']);
        $data['projectHeadUserId'] = $this->
        ProjectModel->getProjectHeadUserId($this
        ->userData['projectId']);
        $data['researchers'] = $this->
        ProjectModel->getResearchers($this->
        userData['projectId']);

        $this->load->view('singleproject/edit',
        $data);
    }
}

function submitSystemLog($log)
{
    date_default_timezone_set('Asia/Manila');
    $datestring = "%Y-%m-%d %h:%i:%s";
    $timestamp = mdate($datestring, time());
    $this->SystemLogModel->insertSystemLog(
    $timestamp, $log, $this->userData['id']);
}

```

Listing 12: SlotModel.php

```
1 <?php
2 class SlotModel extends CI_Model
3 {
4     function __construct()
```

65

```

10   {
11     $query = $this->db->get('freezer');
12
13     if($query->num_rows() > 0)
14     {
15       return $query->result();
16     }
17     else
18     {
19       return false;
20     }
21   }
22
23   function getSlotId($boxId, $row, $column)
24   {
25     $query = $this->db
26       ->where('box_id', $boxId)
27       ->where('row', $row)
28       ->where('column', $column)
29       ->limit(1)
30       ->get('slot');
31
32     if($query->num_rows() > 0)
33     {
34       return $query->row()->id;
35     }
36     else
37     {
38       return false;
39     }
40   }
41
42   function insertIntoSlot($slotId)
43   {
44     $isSuccess = $this->db
45       ->set('is_available', 0)
46       ->where('id', $slotId)
47       ->update('slot');
48
49     return $isSuccess;
50   }
51
52   function removeFromSlot($slotId)
53   {
54     $isSuccess = $this->db
55       ->set('is_available', 1)
56       ->where('id', $slotId)
57       ->update('slot');
58
59     return $isSuccess;
60   }
61
62   function getBoxContainingSlot($row, $column)
63   {
64     $query = $this->db
65       ->where('row', $row)
66       ->where('column', $column)
67       ->limit(1)
68       ->get('slot');
69
70     if($query->num_rows() > 0)
71     {
72       return $query->row()->box_id;
73     }
74     else
75     {
76       return false;
77     }
78
79   function isSlotAvailable($boxId, $row,
80                           $column)
81   {
82     $query = $this->db
83       ->where('row', $row)
84       ->where('column', $column)
85       ->where('box_id', $boxId)
86       ->limit(1)
87       ->get('slot');
88
89     if($query->num_rows() > 0)
90     {
91       if($query->row()->is_available == 1)
92       {
93         return true;
94       }
95       else
96       {
97         return false;
98       }
99     }
100    else
101    {
102      return false;
103    }
104  ?>
```

Listing 13: SourceModel.php

```

1 <?php
2 class SourceModel extends CI_Model
3 {
4   function __construct()
5   {
6     parent::__construct();
7   }
8
9   function getAllSources()
10  {
11    $query = $this->db->get('source');
12
13    if($query->num_rows() > 0)
14    {
15      return $query->result();
16    }
17    else
18    {
19      return false;
20    }
21  }
22
23   function getSourceSex($sourceId)
24  {
25    $query = $this->db->query("Select sex from
26                               source where id ='$sourceId'");
27
28    if($query->num_rows() > 0)
29    {
30      return $query->row()->sex;
31    }
32    else
33    {
34      return false;
35    }
36
37   function insertNewSource($firstName,
38                           $lastName, $sex, $birthdate, $hospital)
39  {
40    $data = array(
41      'firstname' => $firstName,
42      'lastname' => $lastName,
43      'sex' => $sex,
44      'birthdate' => $birthdate,
45      'hospital_name' => $hospital
46    );
47
48    $isSuccess = $this->db->insert('source',
49                                     $data);
50
51    if($isSuccess)
52    {
53      return $this->db->insert_id();
54    }
55    return false;
56  }
57
58  function updateSource($sourceId, $firstName,
59                        $lastName, $sex, $birthdate, $hospital)
60  {
61    $data = array(
62      'firstname' => $firstName,
63      'lastname' => $lastName,
64      'sex' => $sex,
65      'birthdate' => $birthdate,
66      'hospital_name' => $hospital
67    );
68
69    $this->db->where('id', $sourceId);
70
71    $isSuccess = $this->db->update('source',
72                                     $data);
73
74    return $isSuccess;
75  }
76
77  function getSourceInformation($sampleId)
78  {
79    $this->db->select("source.firstname,
80                       source.lastname, source.sex, source.
81                       birthdate, source.hospital.name");
82
83    $this->db->where("sample.id = $sampleId");
84
85    $this->db->where("sample.source_id =
86                      source.id");
87
88    $this->db->from("sample, source");
89
90    $query = $this->db->get();
91
92    if($query->num_rows() > 0)
93    {
94      return $query->result();
95    }
96    else
97    {
98      return false;
99    }
100  }
101
102  ?>
```

Listing 14: Specimen.php

```

1 <?php
2 class Specimen extends CI_Controller
3 {
4     private $userData;
5
6     function __construct()
7     {
8         parent::__construct();
9         $this->load->model('ProjectModel','','TRUE');
10    $this->load->model('UserModel','','TRUE');
11    $this->load->model('UserTypeModel','','TRUE');
12    $this->load->model('SampleModel','','TRUE');
13    $this->load->model('SpecimenTypeModel','','TRUE');
14    $this->load->model('BoxModel','','TRUE');
15    $this->load->model('SlotModel','','TRUE');
16    $this->load->model('SourceModel','','TRUE');
17    $this->load->model('TestModel','','TRUE');
18    $this->load->model('SystemLogModel','','TRUE');
19
20    $this->userData = $this->session->userdata('logged_in');
21
22    if( $this->userData == null )
23    {
24        redirect('authenticate/login');
25    }
26}
27
28 function index()
29 {
30     $data['pageTitle'] = "Specimen";
31     $data['pageHeader'] = "Sample List";
32
33     $data['samples'] = $this->SampleModel->getSamplesOfProject($this->userData['projectId']);
34     $this->load->view('specimen/index', $data);
35 }
36
37 function create()
38 {
39     $this->load->helper(array('form'));
40     $data['pageTitle'] = "Specimen";
41     $data['pageHeader'] = "New Specimen Sample";
42
43     $data['projects'] = $this->ProjectModel->getUserProjectsExceptSessionProject(
44         $this->userData['id'], $this->userData['userTypeId'], $this->userData['projectId'],
45     );
46
47     $data['specimenTypes'] = $this->SpecimenTypeModel->getAllSpecimenTypes();
48
49     $this->load->view('specimen/create', $data);
50 }
51
52 function insert()
53 {
54     $this->load->helper(array('form'));
55     $data['pageTitle'] = "Specimen";
56     $data['pageHeader'] = "New Sample";
57
58     $data['projects'] = $this->ProjectModel->getUserProjectsExceptSessionProject(
59         $this->userData['id'], $this->userData['userTypeId'], $this->userData['projectId'],
60     );
61
62     $data['specimenTypes'] = $this->SpecimenTypeModel->getAllSpecimenTypes();
63
64     $barcode = $this->input->post('barcode');
65     $specimenTypeId = $this->input->post('type');
66
67     $collectionDate = $this->input->post('collectionDate');
68     $originalVolume = $this->input->post('originalVolume');
69     $masked = $this->input->post('masked');
70
71     $boxNumber = $this->input->post('boxNumber');
72     $row = $this->input->post('row');
73     $column = $this->input->post('column');
74
75     $boxId = $this->BoxModel->getBoxId($boxNumber);
76
77     if($this->SlotModel->isSlotAvailable($boxId, $row, $column) == true)
78     {
79         $checkIfSlotIsAvailable = true;
80
81         if($this->SampleModel->getSampleId($barcode) == false)
82         {
83             $checkIfBarcodeIsUnique = true;
84
85             if(( $checkIfBarcodeIsUnique == true) && ($checkIfSlotIsAvailable == true))
86             {
87                 $slotId = $this->SlotModel->getSlotId($boxId, $row, $column);
88                 $insertSlot = $this->SlotModel->insertIntoSlot($slotId);
89
90                 $sourceId;
91                 if($masked != 'on')
92                 {
93                     $firstName = $this->input->post('fName');
94                     $lastName = $this->input->post('lName');
95                     $sex = $this->input->post('sourceSex');
96                     $birthdate = $this->input->post('birthdate');
97                     $hospitalName = $this->input->post('hName');
98
99                     $sourceId = $this->SourceModel->insertNewSource($firstName, $lastName, $sex, $birthdate, $hospitalName);
100                }
101                else
102                {
103                    $hospitalName = $this->input->post('hName');
104                    $sourceId = $this->SourceModel->insertNewSource(null, null, null, null, $hospitalName);
105
106                    if(($insertSlot != false) && ($sourceId != false))
107                    {
108                        $this->BoxModel->updateBoxAvailability($boxId);
109                        $sampleId = $this->SampleModel->insertNewSample($barcode, $collectionDate,
110                         $originalVolume, $originalVolume, $specimenTypeId, $sourceId, $slotId);
111
112                        if($sampleId != false)
113                        {
114                            $this->ProjectModel->assignSampleToProject($sampleId, $this->userData['projectId']);
115                            if($this->input->post('projectNames') != null)
116                            {
117                                foreach($this->input->post('projectNames') as $projectId)
118                                {
119                                    $this->ProjectModel->assignSampleToProject($sampleId, $projectId);
120
121                                }
122
123                                $data['message'] = array(
124                                     'type' => 'success',
125                                     'icon' => 'check',
126                                     'text' => 'You have successfully added a new specimen sample.',
127
128                                );
129
130                                $log = 'added specimen sample (' . $barcode . ')';
131
132                                $this->submitSystemLog($log);
133
134                            }
135
136                        }
137
138                    }
139
140                }
141
142            }
143
144        }
145
146        if($checkIfBarcodeIsUnique != true)
147        {
148            $data['message'] = array(
149                'type' => 'error',
150                'icon' => 'ban',
151                'text' => 'The barcode already exist. Please enter another barcode.'
152            );
153
154        }
155
156    }
157
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138     }
139     else if($checkIfSlotIsAvailable != true)
140     {
141         $data[ 'message' ] = array(
142             'type' => 'error',
143             'icon' => 'ban',
144             'text' => 'The slot is already
145 occupied. Please choose another slot.'
146         );
147     }
148     else
149     {
150         $data[ 'message' ] = array(
151             'type' => 'error',
152             'icon' => 'ban',
153             'text' => 'You have entered a
154 incorrect input. Please check your data'
155         );
156     }
157 }
158
159 function access()
160 {
161     $this->load->helper(array('form'));
162     $data['username'] = $this->userData[ 'username' ];
163     $data['firstname'] = $this->userData[ 'firstname' ];
164     $data['fullname'] = $this->userData[ 'fullname' ];
165     $data['userType'] = $this->userData[ 'userType' ];
166     $userId = $this->userData[ 'id' ];
167     $data['user'] = $this->UserModel->
168     getUserId($this->userData[ 'id' ]);
169     $data['pageTitle'] = "Specimen";
170     $data['pageHeader'] = "Specimen Sample
171 Access";
172     $data['tests'] = $this->TestModel->
173     getAllTests();
174 }
175
176 function logAccess()
177 {
178     $this->load->helper(array('form'));
179     $userId = $this->userData[ 'id' ];
180     $data['pageTitle'] = "Specimen";
181     $data['pageHeader'] = "Specimen Sample
182 Access";
183     $data['tests'] = $this->TestModel->
184     getAllTests();
185     $barcode = $this->input->post('barcode');
186     $amount = $this->input->post('amount');
187     $testId = $this->input->post('test');
188     date_default_timezone_set('Asia/Manila');
189     $datestring = "%Y-%m-%d %h:%i:%s";
190     $time = time();
191     $time = mdate($datestring, $time);
192     $timestamp = mdate($datestring, $time);
193     $sampleId = $this->SampleModel->
194     getSampleId($barcode);
195     if($this->SampleModel->isSampleInProject(
196     $sampleId, $this->userData[ 'projectId' ]) ==
197     true)
198     {
199         if( $this->SampleModel->logAccess(
200         $sampleId, $testId, $timestamp, $amount,
201         $userId, $this->userData[ 'projectId' ]) !=
202         false )
203         {
204             if($this->SampleModel->
205             subtractCurrentVolume($sampleId, $amount
206             != false)
207             {
208                 $data[ 'message' ] = array(
209                     'type' => 'success',
210                     'icon' => 'check',
211                     'text' => 'The specimen
212 sample access is successfully recorded'
213                 );
214             }
215             else
216             {
217                 $data[ 'message' ] = array(
218                     'type' => 'error',
219                     'icon' => 'ban',
220                     'text' => 'The specimen
221 sample access is not successfully
222 recorded'
223                 );
224             }
225         }
226     }
227 }
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282     $data[ 'sharedProjects' ] = $sharedProjects 355
283     $data[ 'sampleInfo' ] = $sampleInfo; 357
285     $data[ 'sourceInfo' ] = $sourceInfo; 358
286     $data[ 'locationInfo' ] = $locationInfo; 358
287     $data[ 'testInfo' ] = $testInfo; 359
288     $data[ 'specimenTypes' ] = $this-> 360
289         SpecimenTypeModel->getAllSpecimenTypes() 361
290
291     $data[ 'sampleId' ] = $sampleId; 362
292     $data[ 'part' ] = $part; 363
293     $this->load->view( 'specimen/edit' , $data) 364
294 } 365
295 function update($part , $sampleId) 366
296 {
297     $this->load->helper( array( 'form' ) ); 369
298     $data[ 'pageTitle' ] = "Specimen"; 370
299     $data[ 'pageHeader' ] = "View Sample"; 371
300     switch($part) 372
301     {
302         case 1: 373
303             $barcode = $this->input->post( ' 374
304                 barcode' ); 375
305             $collectionDate = $this->input->post( 376
306                 'collectionDate' ); 377
307             $originalVolume = $this->input->post( 378
308                 'originalVolume' ); 379
309             $currentVolume = $this->input->post( 380
310                 'currentVolume' ); 381
311             $specimenTypeId = $this->input->post( 382
312                 'specimentype' );
313             if( $this->SampleModel-> 383
314                 updateSampleInfo($sampleId , $barcode , 384
315                     $collectionDate , $originalVolume , 385
316                     $currentVolume , $specimenTypeId ) != false ) 385
317             {
318                 $data[ 'message' ] = array( 387
319                     'type' => 'success' , 388
320                     'icon' => 'check' , 389
321                     'text' => 'The specimen 390
322                         sample information is successfully 391
323                         updated' );
324                         $log = 'updated specimen sample 392
325                             '. $barcode . ' ); 393
326                         $this->submitSystemLog($log); 395
327             }
328             else 396
329             {
330                 $data[ 'message' ] = array( 397
331                     'type' => 'error' , 398
332                     'icon' => 'ban' , 399
333                     'text' => 'The specimen 400
334                         sample information is not successfully 401
335                         updated' );
336                         $log = 'updated specimen sample 402
337                             '. $barcode . ' ); 403
338             }
339             break;
340         case 2:
341             $firstname = $this->input->post( ' 404
342                 firstname' );
343             $lastname = $this->input->post( ' 405
344                 lastname' );
345             $sex = $this->input->post( 'sex' );
346             $birthdate = $this->input->post( ' 407
347                 birthdate' );
348             $hospitalName = $this->input->post( 408
349                 hospitalName' );
350             $sourceId = $this->SampleModel-> 409
351                 getSourceId($sampleId);
352             if( $this->SourceModel->updateSource( 410
353                 $sourceId , $firstname , $lastname , $sex , 412
354                 $birthdate , $hospitalName ) != false ) 413
355             {
356                 $data[ 'message' ] = array( 414
357                     'type' => 'success' , 415
358                     'icon' => 'check' , 416
359                     'text' => 'The source 420
360                         information is successfully updated' 417
361                         );
362                         $barcode = $this->SampleModel-> 418
363                 getSampleBarcode($sampleId);
364                         $log = 'updated specimen sample 420
365                             '. $barcode . ' ); 421
366                         $this->submitSystemLog($log);
367             }
368             else 422
369             {
370                 $data[ 'message' ] = array( 425
371                     'type' => 'error' , 426
372                     'icon' => 'ban' , 427
373                     'text' => 'The source 428
374                         information is not successfully updated' 427
375                         );
376             }
377         break;
378     case 3:
379         $testId = $this->TestModel-> 380
380             getTestsOfSample($sampleId);
381
382         foreach($testId as $row)
383         {
384             $result = $this->input->post( ' 385
385                 result' . $row->id );
386             if( $result != '' )
387             {
388                 if( $result == 'positive' )
389                 {
390                     $result = 1;
391                 }
392                 else
393                 {
394                     $result = 0;
395                 }
396                 $this->TestModel-> 397
397                 updateResultOfTest($row->id , $result);
398             }
399
400             foreach($testId as $row)
401             {
402                 $notes = $this->input->post( ' 403
403                 notes' . $row->id );
404                 if( $notes != '' )
405                 {
406                     $this->TestModel-> 407
407                     updateNotesOfTest($row->id , $notes);
408                 }
409
410             $barcode = $this->SampleModel-> 411
411                 getSampleBarcode($sampleId);
412                 $log = 'updated specimen sample ( ' . 412
413                     $barcode . ' )';
414                 $this->submitSystemLog($log);
415
416             $data[ 'message' ] = array( 417
417                     'type' => 'success' , 418
418                     'icon' => 'check' , 419
419                     'text' => 'The source 423
420                         information is successfully updated' 421
421                         );
422                         $barcode = $this->SampleModel-> 422
423                 getSampleBarcode($sampleId);
424                         $log = 'updated specimen sample 423
425                             ( ' . $barcode . ' )';
426                         $this->submitSystemLog($log);
427             }
428             else
429             {
430                 $data[ 'message' ] = array( 431
431                     'type' => 'error' , 432
432                     'icon' => 'ban' , 433
433                     'text' => 'The source 434
434                         information is not successfully updated. 435
435                         The slot you have chosen is already 436
436                         occupied.' );
437             }
438         }
439         break;

```

```

430     }
431
432     $sharedProjects = $this->SampleModel->
433         getSharedProjects($sampleId, $this->
434            (userData['projectId']));
435     $sampleInfo = $this->SampleModel->
436         getSampleInformation($sampleId, $this->
437             userData['projectId']);
438     $sourceInfo = $this->SourceModel->
439         getSourceInformation($sampleId);
440     $locationInfo = $this->SampleModel->
441         getSampleLocation($sampleId);
442     $testInfo = $this->TestModel->
443         getTestInformation($sampleId);
444
445     $data['sampleId'] = $sampleId;
446     $data['sharedProjects'] = $sharedProjects;
447     $data['sampleInfo'] = $sampleInfo;
448     $data['sourceInfo'] = $sourceInfo;
449     $data['testInfo'] = $testInfo;
450     $data['locationInfo'] = $locationInfo;
451
452     $this->load->view('specimen/view', $data);
453
454     }?
455
456     $data['projects'] = $this->ProjectModel->
457         getUserProjectsExceptSessionProject(
458             $this->userData['id'], $this->userData[,
459                 'userId'], $this->userData['projectId'],
460                 );
461
462     $data['specimenTypes'] = $this->
463         SpecimenTypeModel->getAllSpecimenTypes();
464
465     $this->load->view('specimen/view', $data);
466
467     function submitSystemLog($log)
468     {
469         date_default_timezone_set('Asia/Manila');
470         $datestring = "%Y-%m-%d %h:%i:%s";
471         $timestamp = mdate($datestring, time());
472
473         $this->SystemLogModel->insertSystemLog(
474             $timestamp, $log, $this->userData['id']);
475
476     }?

```

Listing 15: SpecimenTypeModel.php

```

1 <?php
2 class SpecimenTypeModel extends CI_Model
3 {
4     function __construct()
5     {
6         parent::__construct();
7     }
8
9     function getAllSpecimenTypes()
10    {
11         $query = $this->db->get('specimen_type');
12
13         if($query->num_rows() > 0)
14         {
15             return $query->result();
16         }
17         else
18         {
19             return false;
20         }
21     }
22
23     function getSpecimenTypeIdWithName($name)
24    {
25         $query = $this->db
26             ->where('name', $name)
27
28         ->limit(1)
29         ->get('specimen_type');
30
31         if($query->num_rows() > 0)
32         {
33             return $query->row()->id;
34         }
35         else
36         {
37             return false;
38         }
39
40         function insertNewSpecimenType(
41             $specimenTypeName, $unit)
42         {
43             $data = array(
44                 'name' => $specimenTypeName,
45                 'unit' => $unit
46             );
47
48             $isSuccess = $this->db->insert(
49                 'specimenType', $data);
50         }
51     }?

```

Listing 16: SystemLogModel.php

```

1 <?php
2 class SystemLogModel extends CI_Model
3 {
4     function __construct()
5     {
6         parent::__construct();
7     }
8
9     function getSystemLogs()
10    {
11         $query = $this->db
12             ->select('*')
13             ->from('system_log')
14             ->join('user', 'user.id =
15                 system_log.user_id')
16             ->get();
17
18         if($query->num_rows() > 0)
19         {
20             return $query->result();
21         }
22         else
23         {
24             return false;
25         }
26     }
27
28     function insertSystemLog($timestamp, $log,
29         $userId)
30     {
31         $data = array(
32             'timestamp' => $timestamp,
33             'log' => $log,
34             'user_id' => $userId
35         );
36
37         $isSuccess = $this->db->insert('system_log',
38             $data);
39
40         if($isSuccess)
41         {
42             return $this->db->insert_id();
43         }
44         else
45         {
46             return false;
47         }
48     }?

```

Listing 17: SystemLogs.php

```

1 <?php
2 class SystemLogs extends CI_Controller
3 {
4     private $userData;
5
6     function __construct()
7     {
8         parent::__construct();
9         $this->load->model('SystemLogModel', '',
10             TRUE);
11
12         $this->load->helper(array('form'));
13         $this->userData = $this->session->userdata
14             ('logged_in');
15
16         if( $this->userData == null )
17         {
18             redirect('authenticate/login');
19         }
20
21         function index()
22         {
23             $data['pageTitle'] = "";
24             $data['pageHeader'] = "Audit Trail";
25
26             $systemLogs = $this->SystemLogModel->
27                 getSystemLogs();
28             $data['systemLogs'] = $systemLogs;
29
30             $this->load->view('systemlogs/index',
31                 $data);
32     }?

```

Listing 18: TestModel.php

```

1 <?php
2 class TestModel extends CI_Model
3 {
4     function __construct()
5     {
6         parent::__construct();
7     }
8
9     function getAllTests()
10    {
11        $query = $this->db->get('test');
12
13        if($query->num_rows() > 0)
14        {
15            return $query->result();
16        }
17        else
18        {
19            return false;
20        }
21    }
22
23    function getTestInformation($sampleId)
24    {
25        $this->db->select("sample_has_test.id",
26                            "test.name", "sample_has_test.amount",
27                            "sample_has_test.notes", "sample_has_test.result",
28                            "sample_has_test.user_id");
29
30        $this->db->where("sample_has_test.sample_id = $sampleId");
31
32        $this->db->where("test.id = sample_has_test.test_id");
33
34        $this->db->from("sample_has_test, test");
35
36        $query = $this->db->get();
37
38        if($query->num_rows() > 0)
39        {
40            return $query->result();
41        }
42        else
43        {
44            return false;
45        }
46    }
47
48    function getTestsOfSample($sampleId)
49    {
50        $this->db->select("sample_has_test.id");
51        $this->db->from("sample_has_test");
52        $this->db->where("sample_has_test.sample_id = $sampleId");
53        $query = $this->db->get();
54
55        if($query->num_rows() > 0)
56        {
57            return $query->result();
58        }
59        else
60        {
61            return false;
62        }
63    }
64
65    function updateResultOfTest($sampletestId,
66                               $result)
67    {
68        $this->db
69        ->set('result', $result)
70        ->where('id', $sampletestId);
71
72        $isSuccess = $this->db->update(
73            'sample_has_test');
74
75        return $isSuccess;
76    }
77
78 ?>
```

Listing 19: UserModel.php

```

1 <?php
2 class UserModel extends CI_Model
3 {
4     function __construct()
5     {
6         parent::__construct();
7     }
8
9     function assignUserToProject($userTypeId,
10                                $userId, $projectId)
11    {
12        $data = array(
13            'user_type_id' => $userTypeId,
14            'user_id' => $userId,
15            'project_id' => $projectId
16        );
17
18        $isSuccess = $this->db->insert(
19            'user_profile', $data);
20
21        return $isSuccess;
22    }
23
24    function updateProjectHead($projectId,
25                               $newProjectHeadUserId)
26    {
27        $isSuccess = $this->db
28        ->set('user_id',
29               $newProjectHeadUserId)
30
31        ->where('project_id', $projectId)
32        ->where('user_type_id', 2)
33        ->update('user_profile');
34
35        return $isSuccess;
36    }
37
38    function removeResearcher($projectId,
39                             $researcherUserId)
40    {
41        $isSuccess = $this->db
42        ->where('project_id', $projectId)
43
44        ->where('user_type_id', 1)
45
46        ->where('user_id',
47               $researcherUserId)
48
49        ->delete('user_profile');
50
51        return $isSuccess;
52    }
53
54    function insertNewUser($username, $password,
55                          $firstName, $lastName, $email, $sex,
56                          $birthdate, $isActive, $isSysAdmin)
57
58    {
59        $data = array(
60            'username' => $username,
61            'password' => $password,
62            'firstname' => $firstName,
63            'lastname' => $lastName,
64            'email' => $email,
65            'sex' => $sex,
66            'birthdate' => $birthdate,
67            'is_active' => $isActive,
68            'is_sysadmin' => $isSysAdmin
69        );
70
71        $isSuccess = $this->db->insert('user',
72                                         $data);
73
74        return $isSuccess;
75    }
76
77    function updateUser($userId, $username,
78                        $password, $firstName, $lastName, $email,
79                        $sex, $birthdate, $isActive)
80    {
81        $data = array(
82            'username' => $username,
83            'password' => md5($password),
84            'firstname' => $firstName,
85            'lastname' => $lastName,
86            'email' => $email,
87            'sex' => $sex,
88            'birthdate' => $birthdate,
89            'is_active' => $isActive
90        );
91
92        $this->db->where('id', $userId);
93
94        $isSuccess = $this->db->update('user',
95                                         $data);
96
97        return $isSuccess;
98    }
99
100   function updateUsername($userId,
101                           $newUsername)
102   {
103       $this->db
104       ->set('username', $newUsername)
105       ->where('id', $userId);
106
107       $isSuccess = $this->db->update('user');
108
109       return $isSuccess;
110   }
111
112   function updatePassword($userId,
113                           $newPassword)
```

```

88     {
89         $this->db
90             ->set('password', md5($newPassword))
91             ->where('id', $userId);
92
93         $isSuccess = $this->db->update('user');
94
95     }
96
97     function updateFirstName($userId,
98         $newFirstname)
99     {
100        $this->db
101            ->set('firstname', $newFirstname)
102            ->where('id', $userId);
103
104        $isSuccess = $this->db->update('user');
105
106    }
107
108    function updateLastName($userId,
109        $newLastname)
110    {
111        $this->db
112            ->set('lastname', $newLastname)
113            ->where('id', $userId);
114
115        $isSuccess = $this->db->update('user');
116
117    }
118
119    function updateEmail($userId, $newEmail)
120    {
121        $this->db
122            ->set('email', $newEmail)
123            ->where('id', $userId);
124
125    }
126
127    function updateBirthdate($userId,
128        $newBirthdate)
129    {
130        $this->db
131            ->set('birthdate', $newBirthdate)
132            ->where('id', $userId);
133
134        $isSuccess = $this->db->update('user');
135
136    }
137
138    function updateSex($userId, $newSex)
139    {
140        $this->db
141            ->set('sex', $newSex)
142            ->where('id', $userId);
143
144        $isSuccess = $this->db->update('user');
145
146    }
147
148    function activateUser($userId)
149    {
150        $this->db
151            ->set('is_active', 1)
152            ->where('id', $userId);
153
154        $isSuccess = $this->db->update('user');
155
156    }
157
158    function deactivateUser($userId)
159    {
160        $this->db
161            ->set('is_active', 0)
162            ->where('id', $userId);
163
164        $isSuccess = $this->db->update('user');
165
166    }
167
168    function getAllUsers()
169    {
170        $query = $this->db->get('user');
171
172        if ($query->num_rows() > 0)
173        {
174            return $query->result();
175        }
176
177        return false;
178    }
179
180
181    function getUserWithId($userId)
182    {
183        $query = $this->db
184
185            ->where('id', $userId)
186            ->limit(1)
187            ->get('user');
188
189        if ($query->num_rows() > 0)
190        {
191            return $query->row();
192        }
193
194        return false;
195    }
196
197
198    function getAllUsersExceptSysAdmin()
199    {
200        $this->db->select("user.firstname , user.lastname , user.id");
201        $this->db->from("user");
202        $this->db->where("user.is_sysadmin = 'n'");
203
204        $query = $this->db->get();
205
206        if ($query->num_rows() > 0)
207        {
208            return $query->result();
209        }
210
211        return false;
212    }
213
214
215    function getAllUsersExcept($userId)
216    {
217        $this->db->select("user.firstname , user.lastname , user.id");
218        $this->db->from("user");
219        $this->db->where("user.id != $userId");
220
221        $query = $this->db->get();
222
223        if ($query->num_rows() > 0)
224        {
225            return $query->result();
226        }
227
228        return false;
229    }
230
231
232    function getPassword($userId)
233    {
234        $query = $this->db
235            ->where('id', $userId)
236            ->limit(1)
237            ->get('user');
238
239        if ($query->num_rows() > 0)
240        {
241            return $query->row()->password;
242        }
243
244        return false;
245    }
246
247
248
249    function getUsername($userId)
250    {
251        $query = $this->db->where('id', $userId)
252            ->get('user');
253
254        if ($query->num_rows() > 0)
255        {
256            return $query->row()->username;
257        }
258
259        return false;
260    }
261
262
263    function getUserFirstName($userId)
264    {
265        $query = $this->db->where('id', $userId)
266            ->get('user');
267
268        if ($query->num_rows() > 0)
269        {
270            return $query->row()->firstname;
271        }
272
273        return false;
274    }
275
276
277    function getUserLastName($userId)

```

```

278 {
279     $query = $this->db->query(" Select lastnam339
280         from user where id ='$userId'");           340
281     if($query->num_rows() > 0)                  341
282     {                                              342
283         return $query->row()->lastname;          343
284     }                                              344
285     else                                           345
286     {                                              346
287         return false;                           347
288     }                                              348
289 }
290
291 function getUserEmail($userId)                   349
292 {
293     $query = $this->db->query("Select email      350
294         from user where id ='$userId'");          351
295     if($query->num_rows() > 0)                  352
296     {                                              353
297         return $query->row()->email;            354
298     }                                              355
299     else                                           356
300     {                                              357
301         return false;                          358
302     }                                              359
303 }
304
305 function getUserSex($userId)                   360
306 {
307     $query = $this->db->query("Select sex from   361
308         user where id ='$userId'");             362
309     if($query->num_rows() > 0)                  363
310     {                                              364
311         return $query->row()->sex;            365
312     }                                              366
313     else                                           367
314     {                                              368
315         return false;                         369
316     }                                              370
317 }
318
319 function getUserBirthdate($userId)             371
320 {
321     $query = $this->db->query("Select           372
322         birthdate from user where id ='$userId'" 373
323     );                                         374
324     if($query->num_rows() > 0)                  375
325     {                                              376
326         return $query->row()->birthdate;        377
327     }                                              378
328     {                                              379
329         return false;                         380
330     }                                              381
331 }
332
333 function getIsActive($userId)                 382
334 {
335     $query = $this->db->query("Select           383
336         is_active from user where id ='$userId'" 384
337     );                                         385
338     if($query->num_rows() > 0)                  386
339     {                                              387
340         return $query->row()->is_active;        388
341     }                                              389
342     else                                           390
343     {                                              391
344         return false;                         392
345     }                                              393
346 }
347
348 function isRegisteredUser( $username ,       394
349     $password )                                395
350 {
351     $query = $this->db
352         ->where( 'username' , $username )
353         ->where( 'password' , md5( $password )
354         )
355         ->limit(1)
356         ->get('user');
357
358     if( $query->num_rows() > 0 )
359     {
360         return true;
361     }
362     else
363     {
364         return false;
365     }
366 }
367
368 function isSamePassword($userId ,
369     $newPassword)                               370
370 {
371     $query = $this->db
372         ->where( 'id' , $userId )
373         ->where( 'password' , md5( $newPassword )
374         )
375         ->from( 'user' );
376
377     if( $query->get()->num_rows() > 0 )
378     {
379         return true;
380     }
381
382     return false;
383 }
384
385 function isSystemAdmin( $username , $password
386 )                               387
387 {
388     $query = $this->db
389         ->where( 'username' , $username )
390         ->where( 'password' , md5(
391             $password
392         ) )
393         ->where( 'is_active' , 1 )
394         ->where( 'is_sysadmin' , 1 )
395         ->from( 'user' );
396
397     if( $query->get()->num_rows() > 0 )
398     {
399         return true;
400     }
401     return false;
402 }
```

Listing 20: Users.php

```
1 <?php
2 class Users extends CI_Controller
3 {
4     function __construct()
5     {
6         parent::__construct();
7         $this->load->model('ProjectModel', '');
8         $this->load->model('UserModel', '', '');
9         $this->load->model('UserTypeModel', TRUE);
10        $this->load->model('SystemLogModel', TRUE);
11
12        $this->userData = $this->session->u
13            ('logged_in');
14
15        if( $this->userData == null )
16        {
17            redirect('authenticate/login');
18        }
19
20        function index()
21        {
22            $data[ 'pageTitle' ] = "Users";
23            $data[ 'pageHeader' ] = "User List";
24
25            $data[ 'users' ] = $this->UserModel->
```

```
26      getAllUsers () ;
27      $this->load->view( 'user/index' , $data );
28  }
29
30  function  create ()
31  {
32      $this->load->helper( array( 'form' ) );
33      $data[ 'pageTitle' ] = "Users";
34      $data[ 'pageHeader' ] = "New User";
35      $data[ 'userTypes' ] = $this->UserTypeModel
36          ->getUserTypes();
37      $this->load->view( 'user/create' , $data );
38  }
39
40  function  insert ()
41  {
42      $this->load->helper( array( 'form' ) );
43      $data[ 'pageTitle' ] = "Users";
44      $data[ 'pageHeader' ] = "New User";
45
46      $username = $this->input->post( 'username' )
47      ;
48      $password = $this->input->post( 'password' )
49      ;
50      $firstname = $this->input->post( 'firstName'
51      );
52      $lastname = $this->input->post( 'lastName' )
53      ;
```

Listing 21: UserTypeModel.php

```
1 <?php
2 class UserTypeModel extends CI_Model
3 {
4     function __construct()
5     {
6         parent::__construct();
7     }
8
9     function getUserTypes()
10    {
11        $query = $this->db->get('user_type');
12
13        if ($query->num_rows() > 0)
14        {
15            return $query->result();
16        }
17        else
18        {
19            return false;
20        }
21    }
22
23    function getUserType($userTypeId)
24    {
25        $this->db->select("name");
26        $this->db->from("user_type");
27        $this->db->where("id = '$userTypeId'");
28        $query = $this->db->get();
29
30        if ($query->num_rows() > 0)
31        {
32            return $query->row()->name;
33        }
34        else
35        {
36            return false;
37        }
38    }
39
40    function getUserId($userTypeName)
41    {
42        $this->db->select("id");
43        $this->db->from("user_type");
44        $this->db->where("name = '$userTypeName'");
45        $query = $this->db->get();
46
47        if ($query->num_rows() > 0)
48        {
49            return $query->row()->id;
50        }
51        else
52        {
53            return false;
54        }
55    }
56 }
57 ?>
```

Listing 22: Authenticate/login.php

```
1 <!DOCTYPE html> 10
2 <html>
3   <head>
4     <meta charset="UTF-8">
5     <title>IMBB BBSTS | Log in</title> 11
6     <meta content="width=device-width, initial-scale=1, maximum-scale=1, user-scalable=no" name="viewport">
7     <link href=<?php echo base_url(" 13
public_html/vendor/bootstrap/css/
bootstrap.css") ?>" rel="stylesheet" 14
type="text/css" /> 15
8     <link href="https://maxcdn.bootstrapcdn.com/
font-awesome/4.3.0/css/font-awesome. 16
min.css" rel="stylesheet" type="text/css" 17
/> 18
9     <link href=<?php echo base_url(" 19
public_html/vendor/AdminLTE./
AdminLTE.
```

```
20 </div>
21
22 <div class="login-box-body"> 44
23   <span class="col-xs-4"> 45
24     <img src=<?php echo base_url(" 46
public_html/vendor/img/NIH_Logo.png"); ?>
25   " width="100px" margin="30px"></img> 47
26   </span>
27   <span class="col-xs-4"> 48
28     <img src=<?php echo base_url(" 49
public_html/vendor/img/IMBB.png"); ?>" 50
width="80px" margin="30px"></img>
29   </span>
30   <span class=""> 51
31     <img src=<?php echo base_url(" 52
public_html/vendor/img/UPM_Logo.png"); ?>52
32   " width="90px" margin="30px"></img>
33   </span>
34 </div> 53
35 <div class="login-box-body"> 54
36   <?php if( validation_errors() != false 55
37   ) : ?> 56
38     <div class="alert alert-danger alert- 57
39     -dismissible"> 58
40       <button type="button" class="close" 59
41     " data-dismiss="alert" aria-hidden="true" 59
42   > </button> 60
43     <h4><i class="icon fa fa-ban"></i>60
Alert!</h4>
44     <?php echo validation_errors(); ?>
45   </div>
46   <?php endif; ?> 61
47   <?php echo form_open('authenticate/ 61
log_in'); ?>
48     <div class="form-group has-feedback" 62
49       <input name="username" type="text" 63
50       class="form-control" placeholder=" 63
51         Username" />
52         <span class="glyphicon glyphicon- 63
53           user form-control-feedback"></span>
54         </div>
55       <div class="form-group has-feedback" 64
56         <input name="password" type=" 64
57           password" class="form-control" 64
58           placeholder="Password"/>
59             <span class="glyphicon glyphicon- 64
60               lock form-control-feedback"></span>
61             </div>
62           <div class="row">
63             <div class="col-xs-4 col-xs-offset 64
64               -4">
65               <button type="submit" class="btn 64
66                 btn-primary btn-block btn-flat">Log In</
67             button>
68           </div>
69         </div>
70       <?php echo form_close(); ?>
71     </div>
72
73 <script src=<?php echo base_url(" 73
public_html/vendor/plugins/jQuery/jquery- 74
2.1.4.min.js"); ?>></script>
75 <script src=<?php echo base_url(" 75
public_html/vendor/bootstrap/js/bootstrap- 76
min.js"); ?>" type="text/javascript"></
77 script>
78 <script src=<?php echo base_url(" 78
public_html/vendor/plugins/iCheck/icheck- 79
min.js"); ?>" type="text/javascript"></
80 script>
81 </body>
82 </html>
```

Listing 23: Dashboard/home.php

```
1 <!DOCTYPE html>
2 <html>
3 <head>
4   <meta charset="UTF-8">
5   <title>IMBB BSSMS | Dashboard</title>
6   <meta content="width=device-width, initial-
    scale=1, maximum-scale=1, user-scalable=
      no" name='viewport'>
7   <link href="?php echo base_url("public_html
      /vendor/bootstrap/css/bootstrap.css"); ?>
      " rel="stylesheet" type="text/css" />
8   <link href="https://maxcdn.bootstrapcdn.com/
      font-awesome/4.3.0/css/font-awesome.min.
      css" rel="stylesheet" type="text/css" />
9   <link href="https://code.ionicframework.com/
      ionicons/2.0.1/css/ionicons.min.css" rel="40
      " stylesheet" type="text/css" />
10  <link href="?php echo base_url("public_html
      /vendor/plugins/datatables/dataTables.
      bootstrap.css"); ?>" rel="stylesheet"
      type="text/css" />
11  <link href="?php echo base_url("public_html
      /vendor/adminlte/css/AdminLTE.min.css");
      ?>" rel="stylesheet" type="text/css" />
12  <link href="?php echo base_url("public_html
      /vendor/plugins/iCheck/square/blue.css");
      ?>" rel="stylesheet" type="text/css" />
13  <link href="?php echo base_url("public_html
      /vendor/adminlte/css/skins/skin-blue.css"
      49 ); ?>" rel="stylesheet" type="text/css"
      />
14  <link href="?php echo base_url("public_html
      /assets/css/system.css"); ?>" rel="51
      stylesheet" type="text/css" />
15  <!--[if lt IE 9]>
16  <script src="https://oss.maxcdn.com/
      html5shiv/3.7.2/html5shiv.min.js"></
      script>
17  <script src="https://oss.maxcdn.com/respond
      /1.4.2/respond.min.js"></script>
18  <![endif]-->
19 </head>
20
21 <body class="skin-blue sidebar-mini">
22 <div class="wrapper">
23 <header class="main-header">
24   <a href="?<= base_url('dashboard'); ?>" class="55
      =logo">
25     <span class="logo-mini"><b>BSS</b>MS</span>
26     <span class="logo-lg"><b>IMBB BSSMS</b></
      span>
27   </a>
28
29 <nav class="navbar navbar-static-top" role="66
      navigation">
30   <a href="#" class="sidebar-toggle" data-
      toggle="offcanvas" role="button">
31     <span class="icon-bar">
32       <span>
33         <span>
34           <span>
35             <span>
36               <span>
37                 <span>
38                   <span>
39                     <span>
40                       <span>
41                         <span>
42                           <span>
43                             <span>
44                               <span>
45                                 <span>
46                                   <span>
47                                     <span>
48                                       <span>
49                                         <span>
50                                           <span>
51                                             <span>
52                                               <span>
53                                                 <span>
54                                                   <span>
55                                                     <span>
56                                                       <span>
57                                                         <span>
58               </span>
59             </span>
60           </span>
61         </span>
62       </span>
63     </span>
64   </a>
65
66 </nav>
67 </header>
68 <aside class="main-sidebar">
69   <section class="sidebar">
70     <ul class="nav nav-sidebar">
71       <li class="active">
72         <a href="#" data-toggle="control-
            sidebar"><i class="fa fa-gears"></i></a>
73       </li>
74     </ul>
75   </section>
76 </aside>
77 <div class="content-wrapper">
78   <div class="content-header">
79     <div class="container">
80       <div class="row">
81         <div class="col-md-12">
82           <h1>Dashboard</h1>
83           <small>Control Panel</small>
84         </div>
85       </div>
86     </div>
87   </div>
88   <div class="content">
89     <div class="row">
90       <div class="col-md-3">
91         <div class="card card-primary card-
            collapse" data-
            collapse="collapsing">
92           <div class="card-header">
93             <h3>General Information</h3>
94           </div>
95           <div class="card-body">
96             <table border="1">
97               <tr>
98                 <td>User Name</td>
99                 <td>John Doe</td>
100                </tr>
101               <tr>
102                 <td>Email Address</td>
103                 <td>johndoe@example.com</td>
104               </tr>
105               <tr>
106                 <td>Phone Number</td>
107                 <td>(123) 456-7890</td>
108               </tr>
109             </table>
110           </div>
111         </div>
112       </div>
113       <div class="col-md-9">
114         <div class="card card-primary card-
            collapse" data-
            collapse="collapsing">
115           <div class="card-header">
116             <h3>Recent Activities</h3>
117           </div>
118           <div class="card-body">
119             <table border="1">
120               <tr>
121                 <td>File Upload</td>
122                 <td>Completed</td>
123               </tr>
124               <tr>
125                 <td>Database Query</td>
126                 <td>Running</td>
127               </tr>
128               <tr>
129                 <td>System Log</td>
130                 <td>Viewed</td>
131               </tr>
132             </table>
133           </div>
134         </div>
135       </div>
136     </div>
137   </div>
138   <div class="row">
139     <div class="col-md-12">
140       <div class="card card-primary card-
            collapse" data-
            collapse="collapsing">
141         <div class="card-header">
142           <h3>System Status</h3>
143         </div>
144         <div class="card-body">
145           <table border="1">
146             <tr>
147               <td>CPU Usage</td>
148               <td>High</td>
149             </tr>
150             <tr>
151               <td>Memory Usage</td>
152               <td>Medium</td>
153             </tr>
154             <tr>
155               <td>Network Activity</td>
156               <td>Normal</td>
157             </tr>
158           </table>
159         </div>
160       </div>
161     </div>
162   </div>
163 </div>
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69   <div class="user-panel">           118
70     <div class="pull-left image">       119
71       <?= $row->pname?></a></td> 160
113                     <td><?= $row->utname?></td> 161
114                 </tr>                  162
115               <?php endforeach; ?>        163
116               <?php else: ?>            164
117                 <tr>                  165
118                   <td>no available data</td> 166
119               </tbody>                167
120           </table>                168
121           <script src="php echo base_url("public_html/
122             vendor/plugins/jQuery/jQuery -2.1.4.min.js
123             "); ?&gt;"/&gt;&lt;/script&gt;        169
124           &lt;script src="<?php echo base_url("public_html/
125             vendor/bootstrap/js/bootstrap.min.js");
126             ?&gt;" type="text/javascript"&gt;&lt;/script&gt; 170
127           &lt;script src="<?php echo base_url("public.html/
128             vendor/adminlte/js/app.min.js");
129             ?&gt;" type="text/javascript"&gt;&lt;/script&gt; 171
130           &lt;script src="<?php echo base_url("public.html/
131             vendor/plugins/datatables/jquery.
132               dataTables.min.js");
133             ?&gt;" type="text/javascript"&gt;&lt;/script&gt; 172
134           &lt;script src="<?php echo base_url("public.html/
135             vendor/plugins/datatables/dataTables.
136               bootstrap.min.js");
137             ?&gt;" type="text/javascript"&gt;&lt;/script&gt; 173
138           &lt;script src="<?php echo base_url("public.html/
139             vendor/img/IMBB.png");
140             ?&gt;" width="35px"&gt;&lt;/img&gt;        174
141           &lt;img src="<?php echo base_url("public.html/
142             vendor/img/UPM-Logo.png");
143             ?&gt;" width="35px"/&gt;&lt;/img&gt;        175
144           &lt;img src="<?php echo base_url("public.html/
145             vendor/img/NIH-Logo.png");
146             ?&gt;" width="35px"/&gt;&lt;/img&gt;        176
147           &lt;script src="<?php echo base_url("public.html/
148             vendor/plugins/jQuery/jQuery -2.1.4.min.js
149             "); ?&gt;"/&gt;&lt;/script&gt;        177
150           &lt;script src="<?php echo base_url("public.html/
151             vendor/plugins/datatables/dataTables.
152               bootstrap.min.js");
153             ?&gt;" type="text/javascript"&gt;&lt;/script&gt; 178
154           &lt;script src="<?php echo base_url("public.html/
155             vendor/plugins/datatables/dataTables.
156               bootstrap.min.js");
157             ?&gt;" type="text/javascript"&gt;&lt;/script&gt; 179
158           &lt;/html&gt;                  180
</pre

```

**Listing 24:**  
`/home_admin.php`

```

1 <!DOCTYPE html>
2 <html>
3   <head>
4     <meta charset="UTF-8">
5     <title>IMBB BSSMS | Dashboard</title>
6     <meta content='width=device-width, initial-
7       scale=1, maximum-scale=1, user-scalable=
8         no' name='viewport'>
9     <link href="php echo base_url("public.html/
10       vendor/bootstrap/css/bootstrap.css");
11       ?&gt;" rel="stylesheet" type="text/css" /&gt;
12     &lt;link href="https://maxcdn.bootstrapcdn.com/
13       font-awesome/4.3.0/css/font-awesome.min.css"
14       rel="stylesheet" type="text/css" /&gt;
15     &lt;link href="https://code.ionicframework.com/
16       ionicons/2.0.1/css/ionicons.min.css"
17       rel="stylesheet" type="text/css" /&gt;
18     &lt;link href="<?php echo base_url("public.html/
19       vendor/bootstrap/css/font-awesome.css");
20       ?&gt;" rel="stylesheet" type="text/css" /&gt;
21     &lt;link href="<?php echo base_url("public.html/
22       vendor/adminlte/css/AdminLTE.min.css");
23       ?&gt;" rel="stylesheet" type="text/css" /&gt;
24     &lt;link href="https://maxcdn.bootstrapcdn.com/
25       bootstrap/3.3.7/css/bootstrap.min.css"
26       rel="stylesheet" type="text/css" /&gt;
27     &lt;link href="https://fonts.googleapis.com/
28       css?family=Open+Sans:400,600,700&amp;display=
29       slant" rel="stylesheet" type="text/css" /&gt;
30     &lt;link href="https://use.fontawesome.com/
31       e313e3f2.css" rel="stylesheet" type="text/css" /&gt;
32     &lt;link href="https://use.fontawesome.com/
33       8e3fbc05.css" rel="stylesheet" type="text/css" /&gt;
34     &lt;link href="https://use.fontawesome.com/
35       28a745c4.css" rel="stylesheet" type="text/css" /&gt;
36     &lt;link href="https://use.fontawesome.com/
37       5149feff.css" rel="stylesheet" type="text/css" /&gt;
</pre

```

## Dashboard-

```

15   </head>
16   <link href="php echo base_url("public.html/
17     assets/css/system.css");
18     ?&gt;" rel="stylesheet" type="text/css" /&gt;
19   &lt;!--[if lt IE 9]&gt;
20     &lt;script src="https://oss.maxcdn.com/
21       html5shiv/3.7.2/html5shiv.min.js"&gt;&lt;/
22       script&gt;
23     &lt;script src="https://oss.maxcdn.com/respond/
24       /1.4.2/respond.min.js"&gt;&lt;/script&gt;
25   &lt;![endif]--&gt;
26   &lt;body class="skin-blue sidebar-mini"&gt;
27     &lt;div class="wrapper"&gt;
28       &lt;header class="main-header"&gt;
29         &lt;a href="<?= base_url('dashboard'); ?&gt;" class=
30           = "logo"&gt;
31           &lt;span class="logo-mini"&gt;BSS&lt;/span&gt;
32           &lt;span class="logo-lg"&gt;IMBB BSSMS&lt;/span&gt;
33         &lt;/a&gt;
34         &lt;nav class="navbar navbar-static-top" role="
35           navigation"&gt;
36           &lt;a href="#" class="sidebar-toggle" data-
37             toggle="offcanvas" role="button"&gt;
38             &lt;span class="sr-only"&gt;Toggle navigation
39             &lt;/span&gt;
40           &lt;/a&gt;
41           &lt;div class="navbar-custom-menu"&gt;
42             &lt;ul class="nav navbar-nav"&gt;
43               &lt;li class="dropdown user user-menu"&gt;
44                 &lt;a href="#" class="dropdown-toggle"&gt;
45                   &lt;img src="<?= base_url("public.html/
46                     vendor/adminlte/css/skins/skin-blue.css");
47                     ?&gt;" rel="stylesheet" type="text/css" /&gt;
48                 &lt;/a&gt;
49               &lt;/li&gt;
50             &lt;/ul&gt;
51           &lt;/div&gt;
52         &lt;/nav&gt;
53       &lt;/header&gt;
54       &lt;aside class="control-sidebar control-sidebar-
55         fixed"&gt;
56         &lt;div class="control-sidebar-content"&gt;
57           &lt;div class="p-3"&gt;
58             &lt;h3&gt;Control Panel&lt;/h3&gt;
59             &lt;ul class="list-group"&gt;
60               &lt;li&gt;Dashboard&lt;/li&gt;
61               &lt;li&gt;Users&lt;/li&gt;
62               &lt;li&gt;Products&lt;/li&gt;
63               &lt;li&gt;Orders&lt;/li&gt;
64               &lt;li&gt;Reports&lt;/li&gt;
65             &lt;/ul&gt;
66           &lt;/div&gt;
67         &lt;/div&gt;
68       &lt;/aside&gt;
69       &lt;div class="content-wrapper"&gt;
70         &lt;div class="content-header"&gt;
71           &lt;h1&gt;Dashboard&lt;/h1&gt;
72           &lt;small&gt;AdminLTE v2.4.2&lt;/small&gt;
73         &lt;/div&gt;
74         &lt;div class="content"&gt;
75           &lt;div class="row"&gt;
76             &lt;div class="col-md-6"&gt;
77               &lt;div class="card card-primary card-outline"&gt;
78                 &lt;div class="card-header"&gt;
79                   &lt;h3&gt;General Statistics&lt;/h3&gt;
80                 &lt;div class="card-tools"&gt;
81                   &lt;button type="button" class="btn btn-
82                     primary"&gt;View Details&lt;/button&gt;
83                 &lt;/div&gt;
84               &lt;/div&gt;
85             &lt;/div&gt;
86             &lt;div class="col-md-6"&gt;
87               &lt;div class="card card-primary card-outline"&gt;
88                 &lt;div class="card-header"&gt;
89                   &lt;h3&gt;Recent Activity&lt;/h3&gt;
90                 &lt;div class="card-tools"&gt;
91                   &lt;button type="button" class="btn btn-
92                     primary"&gt;View Details&lt;/button&gt;
93                 &lt;/div&gt;
94               &lt;/div&gt;
95             &lt;/div&gt;
96           &lt;/div&gt;
97           &lt;div class="row"&gt;
98             &lt;div class="col-md-4"&gt;
99               &lt;div class="card card-primary card-outline"&gt;
100                 &lt;div class="card-header"&gt;
101                   &lt;h3&gt;User Management&lt;/h3&gt;
102                   &lt;div class="card-tools"&gt;
103                     &lt;button type="button" class="btn btn-
104                       primary"&gt;View Details&lt;/button&gt;
105                   &lt;/div&gt;
106                 &lt;/div&gt;
107               &lt;/div&gt;
108             &lt;/div&gt;
109             &lt;div class="col-md-4"&gt;
110               &lt;div class="card card-primary card-outline"&gt;
111                 &lt;div class="card-header"&gt;
112                   &lt;h3&gt;Report Generation&lt;/h3&gt;
113                   &lt;div class="card-tools"&gt;
114                     &lt;button type="button" class="btn btn-
115                       primary"&gt;View Details&lt;/button&gt;
116                   &lt;/div&gt;
117                 &lt;/div&gt;
118               &lt;/div&gt;
119             &lt;/div&gt;
120           &lt;/div&gt;
121           &lt;div class="row"&gt;
122             &lt;div class="col-md-6"&gt;
123               &lt;div class="card card-primary card-outline"&gt;
124                 &lt;div class="card-header"&gt;
125                   &lt;h3&gt;System Status&lt;/h3&gt;
126                   &lt;div class="card-tools"&gt;
127                     &lt;button type="button" class="btn btn-
128                       primary"&gt;View Details&lt;/button&gt;
129                   &lt;/div&gt;
130                 &lt;/div&gt;
131               &lt;/div&gt;
132             &lt;/div&gt;
133             &lt;div class="col-md-6"&gt;
134               &lt;div class="card card-primary card-outline"&gt;
135                 &lt;div class="card-header"&gt;
136                   &lt;h3&gt;Performance Metrics&lt;/h3&gt;
137                   &lt;div class="card-tools"&gt;
138                     &lt;button type="button" class="btn btn-
139                       primary"&gt;View Details&lt;/button&gt;
140                   &lt;/div&gt;
141                 &lt;/div&gt;
142               &lt;/div&gt;
143             &lt;/div&gt;
144           &lt;/div&gt;
145           &lt;div class="row"&gt;
146             &lt;div class="col-md-6"&gt;
147               &lt;div class="card card-primary card-outline"&gt;
148                 &lt;div class="card-header"&gt;
149                   &lt;h3&gt;Logs &amp; Errors&lt;/h3&gt;
150                   &lt;div class="card-tools"&gt;
151                     &lt;button type="button" class="btn btn-
152                       primary"&gt;View Details&lt;/button&gt;
153                   &lt;/div&gt;
154                 &lt;/div&gt;
155               &lt;/div&gt;
156             &lt;/div&gt;
157           &lt;/div&gt;
158         &lt;/div&gt;
159       &lt;/div&gt;
160     &lt;/div&gt;
161   &lt;/div&gt;
162 &lt;/body&gt;
163 &lt;/html&gt;
</pre

```

```

    public_html/vendor/adminlte/img/avatar.png"); ?>" class="user-image" alt="User Image"/>
38     <span class="hidden-xs"><?= $this->session->userdata('logged_in')[ 'firstname']; ?></span>
39     </a>
40     <ul class="dropdown-menu">
41         <li class="user-header">
42             " class="img-circle" alt="User Image" />
43             <p>
44                 <?= $this->session->userdata('logged_in')[ 'fullname']; ?>
45             <small style="color:#00c0ef;">?= ($this->session->userdata('logged_in')[ 'is_sysadmin' ] ? 'System Administrator' : ' ') ?></small>
46             </p>
47             </li>
48             <li class="user-footer">
49                 <div class="pull-right">
50                     <a href="?= base_url('authenticate/logout');?>" class="btn btn-default btn-flat">Sign out</a>
51                     </div>
52                 </li>
53             </ul>
54             <li>
55                 <a href="#" data-toggle="control-sidebar"><i class="fa fa-gears"></i></a>
56             </li>
57             </ul>
58         </div>
59     </div>
60     </nav>
61 </header>
62 <aside class="main-sidebar">
63     <section class="sidebar">
64         <div class="user-panel">
65             <div class="pull-left image">
66                 " class="img-circle" alt="User Image" />
67             </div>
68             <div class="pull-left info">
69                 <p><?= $this->session->userdata('logged_in')[ 'fullname' ]; ?></p>
70             </div>
71         </div>
72         <ul class="sidebar-menu">
73             <li class="header"></li>
74             <li class="treeview">
75                 <a href="#"><i class="glyphicon glyphicon-task"></i> <span>Projects </span></a>
76                 <ul class="treeview-menu">
77                     <li><a href="?= base_url('projects/create');?>"><i class="glyphicon glyphicon-chevron-right"></i>New Project </a></li>
78                     <li><a href="?= base_url('projects');?>"><i class="glyphicon glyphicon-chevron-right"></i>Project List </a></li>
79                     </ul>
80                 </li>
81                 <li class="treeview">
82                     <a href="#"><i class="glyphicon glyphicon-task"></i></a> <span>Users </span></a>
83                     <ul class="treeview-menu">

```

Listing 25: Profile/edit.php

```

1 <!DOCTYPE html>
2 <html>
3 <head>
4     <meta charset="UTF-8">
5     <title>IMBB BSSMS | Dashboard</title>
6     <meta content='width=device-width, initial-scale=1, maximum-scale=1, user-scalable=no' name='viewport'>
7     <link href="=?php echo base_url("public_html/vendor/bootstrap/css/bootstrap.css"); ?>" rel="stylesheet" type="text/css" />
8     <link href="https://maxcdn.bootstrapcdn.com/font-awesome/4.3.0/css/font-awesome.min.css" rel="stylesheet" type="text/css" />
9     <link href="https://code.ionicframework.com/1.0.0-beta.2/css/ionicons.min.css" rel="stylesheet" type="text/css" />
10    <link href="=?php echo base_url("public_html/vendor/plugins/datatables/dataTables.bootstrap.css"); ?>" rel="stylesheet" type="text/css" />
11    <link href="=?php echo base_url("public_html/vendor/adminlte/css/AdminLTE.min.css"); ?>" rel="stylesheet" type="text/css" />
12    <link href="=?php echo base_url("public_html/vendor/plugins/iCheck/square/blue.css"); ?>" rel="stylesheet" type="text/css" />
13    <link href="=?php echo base_url("public_html/vendor/adminlte/css/skins/skin-blue.css"); ?>" rel="stylesheet" type="text/css" />
14    <link href="=?php echo base_url("public_html/assets/css/system.css"); ?>" rel="stylesheet" type="text/css" />
15    <!--[if lt IE 9]>
16        <script src="https://oss.maxcdn.com/html5shiv/3.7.2/html5shiv.min.js"></script>
17        <script src="https://oss.maxcdn.com/respond/1.4.2/respond.min.js"></script>
18    <![endif]-->
19 </head>
20 <body class="skin-blue sidebar-mini">
21     <div class="wrapper">

```

```

23 <header class="main-header">
24   <a href="= base_url('dashboard'); ?&gt;" class="90
25     ="logo"&gt; 91
26     &lt;span class="logo-mini"&gt;&lt;b&gt;BSS&lt;/b&gt;MS&lt;/span&gt; 93
27   &lt;span class="logo-lg"&gt;&lt;b&gt;IMBB BSSMS&lt;/b&gt;&lt;/span&gt; 95
28 &lt;/a&gt; 96
29 &lt;nav class="navbar navbar-static-top" role="navigation"&gt; 97
30   &lt;a href="#" class="sidebar-toggle" data- 98
31     toggle="offcanvas" role="button"&gt; 99
32     &lt;span class="sr-only"&gt;Toggle navigation 100
33   &lt;/span&gt; 101
34 &lt;/a&gt; 102
35 &lt;div class="navbar-custom-menu"&gt; 103
36   &lt;ul class="nav navbar-nav"&gt; 104
37     &lt;li class="dropdown user user-menu"&gt; 105
38       &lt;a href="#" class="dropdown-toggle" data- 106
39         toggle="dropdown"&gt; 107
40         &lt;img src="<?= base_url(" 108
41           public_html/vendor/adminlte/img/avatar. 109
42             png"); ?&gt;" class="user-image" alt="User 110
43             Image"/&gt; 111
44           &lt;span class="hidden-xs"&gt;&lt;?= $this-&gt; 112
45             session-&gt;userdata('logged_in')[ 113
46               'firstname']; ?&gt;&lt;/span&gt; 114
47             &lt;/a&gt; 115
48           &lt;ul class="dropdown-menu"&gt; 116
49             &lt;li class="user-header"&gt; 117
50               &lt;img src="<?= base_url(" 118
51                 public_html/vendor/adminlte/img/avatar. 119
52                   png"); ?&gt;" class="img-circle" alt="User 120
53                     Image" /&gt; 121
54             &lt;p&gt; 122
55               &lt;?= $this-&gt;session-&gt;userdata(' 123
56                 logged_in')['fullname']; ?&gt; 124
57             &lt;/p&gt; 125
58             &lt;/li&gt; 126
59           &lt;li class="user-footer"&gt; 127
60             &lt;div class="col-xs-4 text-center" 128
61               &lt;a href="<?= base_url(' 129
62                 dashboard'); ?&gt;" class="btn btn-default 130
63                   btn-flat"&gt;Dashboard&lt;/a&gt; 131
64             &lt;/div&gt; 132
65           &lt;div class="col-xs-4 text-center" 133
66             &lt;a href="<?= base_url(' 134
67               profile'); ?&gt;" class="btn btn-default 135
68                   btn-flat"&gt;Profile&lt;/a&gt; 136
69             &lt;/div&gt; 137
70           &lt;div class="col-xs-4 text-center" 138
71             &lt;a href="#" data-toggle="control- 139
72               sidebar"&gt;&lt;i class="fa fa-gears"&gt;&lt;/i&gt;&lt;/a&gt; 140
73             &lt;/div&gt; 141
74 &lt;/header&gt; 142
75 &lt;aside class="main-sidebar"&gt; 143
76   &lt;section class="sidebar"&gt; 144
77     &lt;div class="user-panel"&gt; 145
78       &lt;div class="pull-left image"&gt; 146
79         &lt;img src="<?= base_url(" 147
80           public_html/vendor/adminlte/img/avatar. 148
81             png"); ?&gt;" class="img-circle" alt="User Image" /&gt; 149
82       &lt;/div&gt; 150
83       &lt;div class="pull-left info"&gt; 151
84         &lt;p&gt;&lt;?= $this-&gt;session-&gt;userdata(' 152
85           logged_in')['fullname']; ?&gt;&lt;/p&gt; 153
86       &lt;/div&gt; 154
87       &lt;ul class="sidebar-menu" style="display: 155
88         none"&gt; 156
89     &lt;/ul&gt; 157
90   &lt;/section&gt; 158
91 &lt;/aside&gt; 159
92 &lt;div class="content-wrapper"&gt; 160
93   &lt;section class="content-header"&gt; 161
94     &lt;h1&gt; 162
95       &lt;?php echo $pageHeader; ?&gt; 163
96     &lt;small&gt;&lt;/small&gt; 164
97   &lt;/h1&gt; 165
98   &lt;ol class="breadcrumb"&gt; 166
99     &lt;li&gt;&lt;a href="#"&gt;&lt;i class="fa fa- 167
100       dashboard"&gt;&lt;/i&gt; &lt;?php echo $pageTitle; 168
101       ?&gt;&lt;/a&gt;&lt;/li&gt; 169
102     &lt;li class="active"&gt;&lt;?php echo 170
103       $pageHeader; ?&gt;&lt;/li&gt; 171
104   &lt;/ol&gt; 172
105 &lt;/section&gt; 173
106 &lt;!-- Main content --&gt; 174
107 &lt;section class="content"&gt; 175
108   &lt;div class="row"&gt; 176
109     &lt;div class="col-md-12"&gt; 177
110       &lt;div class="box box-primary"&gt; 178
111         &lt;div class="box-header"&gt; 179
112           &lt;h3 class="box-title"&gt;User 180
113             Information&lt;/h3&gt; 181
114           &lt;div class="form-group"&gt; 182
115             &lt;label for="username"&gt; 183
116               Username&lt;/label&gt; 184
117             &lt;input type="hidden" 185
118               class="form-control" name="userId" value= 186
119                 "&lt;?= $user-&gt;id ?&gt;"&gt;&lt;/input&gt; 187
120             &lt;input type="text" class= 188
121               "form-control" id="username" name=" 122
122                 username" placeholder="Enter Username" 123
123               value=&lt;?= $user-&gt;username ?&gt;"&gt;&lt;/input&gt; 124
124             &lt;/div&gt; 125
125             &lt;div class="form-group"&gt; 126
126               &lt;label for="currentPassword"&gt; 127
127                 Current Password&lt;/label&gt; 128
128               &lt;input type="password" 129
129                 class="form-control" id="currentPassword" 130
130                   name="currentPassword" placeholder=" 131
131                     Enter Current Password"&gt;&lt;/input&gt; 132
132             &lt;/div&gt; 133
133             &lt;div class="form-group"&gt; 134
134               &lt;label for="newPassword"&gt; 135
135                 New Password&lt;/label&gt; 136
136               &lt;input type="password" 137
137                 class="form-control" id="newPassword" 138
138                   name="newPassword" placeholder="Enter New 139
139                     Password"&gt;&lt;/input&gt; 140
140             &lt;/div&gt; 141
141             &lt;div class="form-group"&gt; 142
142               &lt;label for="firstName"&gt; 143
143                 First Name&lt;/label&gt; 144
144               &lt;input type="text" class= 145
145                 "form-control" id="firstName" name=" 146
146                   firstName" placeholder="Enter First Name" 147
147                   value=&lt;?= $user-&gt;firstname ?&gt;"&gt;&lt;/input&gt; 148
148             &lt;/div&gt; 149
149             &lt;div class="form-group"&gt; 150
150               &lt;label for="lastName"&gt; 151
151                 Last Name&lt;/label&gt; 152
152               &lt;input type="text" class= 153
153                 "form-control" id="lastName" name=" 154
154                   lastName" placeholder="Enter Last Name" 155
155                   value=&lt;?= $user-&gt;lastname ?&gt;"&gt;&lt;/input&gt; 156
156             &lt;/div&gt; 157
157             &lt;div class="col-sm-6 invoice" 158
158               &lt;div class="form-group"&gt; 159
159               &lt;label for="emailAd"&gt; 160
160                 Email Address&lt;/label&gt; 161
161               &lt;input type="email" 162
162                 class="form-control" id="emailAd" name=" 163
163                   emailAd" placeholder="Enter Email Address" 164
164                   value=&lt;?= $user-&gt;email ?&gt;"&gt;&lt;/input&gt; 165
165             &lt;/div&gt; 166
166             &lt;div class="form-group"&gt; 167
167               &lt;label for="birthDate"&gt; 168
168                 Date of Birth&lt;/label&gt; 169
169               &lt;input type="date" class= 170
170                 "form-control" id="birthDate" name=" 171
171                   birthDate" value=&lt;?= $user-&gt;birthdate ?&gt; 172
172             &lt;/input&gt; 173
173             &lt;/div&gt; 174
174             &lt;div class="form-group"&gt; 175
175               &lt;label&gt;Sex&lt;/label&gt; 176
176               &lt;div class="radio"&gt; 177
177                 &lt;label&gt; 178
178                   &lt;input type="radio" 179
179                     value="male" checked=""&gt; 180
180                   Male&lt;/label&gt; 181
181                 &lt;/div&gt; 182
182               &lt;div class="radio"&gt; 183
183                 &lt;label&gt; 184
184                   &lt;input type="radio" 185
185                     value="female" checked=""&gt; 186
186                   Female&lt;/label&gt; 187
187             &lt;/div&gt; 188
188           &lt;/div&gt; 189
189         &lt;/div&gt; 190
190       &lt;/div&gt; 191
191     &lt;/div&gt; 192
192   &lt;/div&gt; 193
193 &lt;/section&gt; 194
</pre

```

```

    " id="femaleRadio" name="sex" value=" 179
    female" <?= ($user->sex != 'female' ? : ,
149      checked' ) ?>/>
        Female 180
            </label> 181
150        </div> 182
151        <div class="radio"> 183
152            <label> 184
153                <input type="radio" 185
154        " id="maleRadio" name="sex" value="male" 186
<?= ($user->sex != 'male' ? : 'checked' ) 187
?>/>
        Male 188
            </label> 189
155        </div> 190
156        </div> 191
157        <center> 192
158            <button type="button" 193
159                class="btn btn-primary" data-toggle=" 194
modal" data-target="#myModal" >Update</
160 button>
161            <button type="reset" clas#94
162        ="btn btn-default" >Clear</button>
163        </center> 195
164        </div> 196
165        </div> 197
166        <div> 198
167            <div class="modal fade" id="myModal" 199
168                tabindex="-1" role="dialog" aria-
169                labelledby="myModalLabel" aria-hidden=" 200
true">
170                <div class="modal-dialog">
171                    <div class="modal-content"> 201
172                        <div class="modal-header">
173                            <button type="button" class=" 202
close" data-dismiss="modal" aria-label="Close"><span aria-hidden="true">&times;</
174 span></button>
                            <h4 class="modal-title">Are 203
you sure you want to update your profile 204
?</h4>
                    </div> 205
                    <div class="modal-footer"> 206
                        <button type="submit" class=" 205
" btn btn-primary" >Update</button>

```

Listing 26: Profile/index.php

```

1 <!DOCTYPE html>
2 <html>
3 <head>
4     <meta charset="UTF-8">
5     <title>IMBB BSSMS | Dashboard</title> 27
6     <meta content="width=device-width, initial-
scale=1, maximum-scale=1, user-scalable=
no" name="viewport" >
7     <link href="<?php echo base_url("public_html
/vendor/bootstrap/css/bootstrap.css"); ?>
" rel="stylesheet" type="text/css" /> 31
8     <link href="https://maxcdn.bootstrapcdn.com/
font-awesome/4.3.0/css/font-awesome.min.
css" rel="stylesheet" type="text/css" /> 33
9     <link href="https://code.ionicframework.com/
ionicons/2.0.1/css/ionicons.min.css" rel=
"stylesheet" type="text/css" /> 35
10    <link href="<?php echo base_url("public_html
/vendor/plugins/datatables/dataTables.
bootstrap.css"); ?>" rel="stylesheet"
type="text/css" /> 36
11    <link href="<?php echo base_url("public_html
/vendor/adminlte/css/AdminLTE.min.css");
?>" rel="stylesheet" type="text/css" /> 37
12    <link href="<?php echo base_url("public.html
/vendor/plugins/iCheck/square/blue.css");
?>" rel="stylesheet" type="text/css" /> 40
13    <link href="<?php echo base_url("public.html
/vendor/adminlte/css/skins/skin-blue.css");
?>" rel="stylesheet" type="text/css" /> 41
14    <link href="<?php echo base_url("public.html
/assets/css/system.css"); ?>" rel="
stylesheet" type="text/css" /> 42
15    <!--[if lt IE 9]> 44
16    <script src="https://oss.maxcdn.com/
html5shiv/3.7.2/html5shiv.min.js"></
script> 45
17    <script src="https://oss.maxcdn.com/respond
/1.4.2/respond.min.js"></script> 48
18    <![endif]-->
19 </head> 49
20 <body class="skin-blue sidebar-mini"> 50
21 <div class="wrapper"> 51
22 <header class="main-header">
23 <a href="<?= base_url('dashboard');?>" class

```

=" logo">
 <span class="logo-mini"><b>BSS</b>MS</span
 >
 <span class="logo-lg"><b>IMBB BSSMS</b></
 span>
 </a>
 <nav class="navbar navbar-static-top" role="
navigation">
 <a href="#" class="sidebar-toggle" data-
 toggle="offcanvas" role="button">
 <span class="sr-only">Toggle navigation
 </span>
 </a>
 <div class="navbar-custom-menu">
 <ul class="nav navbar-nav">
 <li class="dropdown user user-menu">
 <a href="#" class="dropdown-toggle" data-
 toggle="dropdown">
 " class="user-image" alt="User
Image"/>
 <span class="hidden-xs"><?= \$this
->session->userdata('logged\_in')['
firstname']; ?></span>
 </a>
 <ul class="dropdown-menu">
 <li class="user-header">
 " class="img-circle" alt="User
Image" />
 <p>
 <?= \$this->session->userdata(
logged\_in )[ 'fullname' ]; ?>
 </p>
 </li>
 <li class="user-footer">
 <div class="col-xs-4 text-center
">
 <a href="<?= base\_url(
dashboard);?>" class="btn btn-default
btn-flat">Dashboard</a>
 </div>
 <div class="col-xs-4 text-center
">
 <a href="<?= base\_url('profile
');?>" class="btn btn-default btn-flat">

Listing 27: Projects/create.php

```
1 <!DOCTYPE html>
2 <html>
3 <head>
4   <meta charset="UTF-8">
5   <title>IMBB BSSMS | Dashboard</title>
6   <meta content="width=device-width, initial-scale=1, maximum-scale=1, user-scalable=no" name="viewport">
7   <link href=<?php echo base_url("public_html13
     /vendor/bootstrap/css/bootstrap.css"); ?>
     " rel="stylesheet" type="text/css" />
8   <link href=<?php echo base_url("public_html14
     /vendor/plugins/multiselect/css/multi-
     select.css"); ?>" rel="stylesheet" type="text/css" />
9   <link href="https://maxcdn.bootstrapcdn.com/font-awesome/4.3.0/css/font-awesome.min.css" rel="stylesheet" type="text/css" />
```

```
10  <link href="https://code.ionicframework.com/ionicicons/2.0.1/css/ionicons.min.css" rel="stylesheet" type="text/css" />
11  <link href=<?php echo base_url("public_html/vendor/plugins/datatables/dataTables.bootstrap.css"); ?>" rel="stylesheet" type="text/css" />
12  <link href=<?php echo base_url("public_html/vendor/adminLTE/css/AdminLTE.min.css"); ?>" rel="stylesheet" type="text/css" />
13  <link href=<?php echo base_url("public_html/vendor/plugins/iCheck/square/blue.css"); ?>" rel="stylesheet" type="text/css" />
14  <link href=<?php echo base_url("public_html/vendor/adminLTE/css/skins/skin-blue.css"); ?>" rel="stylesheet" type="text/css" />
15  <link href=<?php echo base_url("public_html/assets/css/system.css"); ?>" rel="
```

```

    stylesheet" type="text/css" />
16   <!--[if lt IE 9]> 79
17   <script src="https://oss.maxcdn.com/
      html5shiv/3.7.2/html5shiv.min.js"></
      script> 80
18   <script src="https://oss.maxcdn.com/respond/
      /1.4.2/respond.min.js"></script> 81
19   <![endif]--> 82
20 </head> 83
21
22 <body class="skin-blue sidebar-mini">
23 <div class="wrapper">
24 <header class="main-header"> 85
25   <a href="= base_url('dashboard') ?&gt;" class=
      "logo"&gt;
26     &lt;span class="logo-mini"&gt;&lt;b&gt;BSS&lt;/b&gt;MS&lt;/span&gt; 86
27     &lt;span class="logo-lg"&gt;&lt;b&gt;IMBB BSSMS&lt;/b&gt;&lt;/
      span&gt; 87
28   &lt;/a&gt; 88
29   &lt;nav class="navbar navbar-static-top" role=" 89
      navigation"&gt;
30     &lt;a href="#" class="sidebar-toggle" data-
      toggle="offcanvas" role="button"&gt; 90
31       &lt;span class="sr-only"&gt;Toggle navigation 91
32     &lt;/span&gt; 92
33   &lt;/a&gt; 93
34   &lt;div class="navbar-custom-menu"&gt; 95
35     &lt;ul class="nav navbar-nav"&gt; 96
36       &lt;li class="dropdown user user-menu"&gt; 97
37         &lt;a href="#" class="dropdown-toggle" 98
            data-toggle="dropdown"&gt; 99
            &lt;img src="<?= base_url(" 100
              public_html/vendor/adminlte/img/avatar.
              png"); ?&gt;" class="user-image" alt="User 101
              Image"/&gt; 102
            &lt;span class="hidden-xs"&gt;&lt;?= $this 103
              -&gt;session-&gt;userdata('logged_in')[ 104
              'firstname']; ?&gt;&lt;/span&gt;
38
39     &lt;ul class="dropdown-menu" 105
40       &lt;li class="user-header"&gt; 106
41         &lt;img src="<?= base_url(" 107
              public_html/vendor/adminlte/img/avatar.
              png"); ?&gt;" class="img-circle" alt="User 108
              Image" /&gt; 109
42           &lt;p&gt; 110
43             &lt;?= $this-&gt;session-&gt;userdata(' 111
              logged_in')['fullname']; ?&gt;
44               &lt;small style="color:#00c0ef;"&gt; 112
45             &gt;&lt;?= ($this-&gt;session-&gt;userdata('logged_in 113
              ')['is_sysadmin'] ? 'System Administrator 114
              , : ' ) ?&gt;&lt;/small&gt;
46           &lt;/p&gt; 115
47         &lt;/li&gt; 116
48         &lt;li class="user-footer"&gt; 117
49           &lt;div class="pull-right"&gt; 118
50             &lt;a href="<?= base_url(' 119
              authenticate/logout'); ?&gt;" class="btn btn-
              default btn-flat"&gt;Sign out&lt;/a&gt; 120
51           &lt;/div&gt; 121
52         &lt;/li&gt; 122
53       &lt;/ul&gt; 123
54     &lt;/li&gt;
55   &lt;/ul&gt;
56   &lt;a href="#" data-toggle="control- 124
      sidebar"&gt;&lt;i class="fa fa-gears"&gt;&lt;/i&gt;&lt;/a&gt;
57   &lt;/li&gt; 125
58 &lt;/ul&gt; 126
59 &lt;/div&gt; 127
60 &lt;/nav&gt;
61 &lt;/header&gt;
62 &lt;aside class="main-sidebar"&gt; 128
63   &lt;section class="sidebar"&gt;
64     &lt;div class="user-panel"&gt;
65       &lt;div class="pull-left image"&gt;
66         &lt;img src="<?= base_url("public_html/
              vendor/adminlte/img/avatar.png"); ?&gt;" 129
              class="img-circle" alt="User Image" /&gt; 130
67       &lt;/div&gt;
68       &lt;div class="pull-left info"&gt; 132
69         &lt;p&gt;&lt;?= $this-&gt;session-&gt;userdata(' 133
              logged_in')['fullname']; ?&gt;&lt;/p&gt;
70       &lt;/div&gt;
71     &lt;ul class="sidebar-menu"&gt; 134
72       &lt;li class="header"&gt;&lt;/li&gt; 135
73       &lt;li class="active"&gt; 136
74         &lt;a href="#"&gt;&lt;i class="glyphicon glyphicon-
              tasks"&gt;&lt;/i&gt; &lt;span&gt;Projects &lt;/
              span&gt;&lt;/a&gt; 137
75           &lt;ul class="treeview-menu"&gt; 138
76             &lt;li class="active"&gt;&lt;a href=" 139
              <?= base_url('projects/create'); ?&gt;"&gt;&lt;i 140
              class="glyphicon glyphicon-chevron-right" 141
              &gt;&lt;/i&gt;New Project&lt;/a&gt;&lt;/li&gt;
77             &lt;li&gt;&lt;a href="<?= base_url(' 142
              projects'); ?&gt;"&gt;&lt;i class="glyphicon
              glyphicon-chevron-right"&gt;&lt;/i&gt;Project List&lt;/a&gt;
</pre

```

```

143         <div class="col-sm-6 invoice-col">
144             <div class="form-group">
145                 <label>Project Head<i class="glyphicon glyphicon-asterisk" style="color:red"></i></label>
146                 <select class="form-control" name="projectHead" id="projectHead" required="required">
147                     <option></option>
148                     <?php foreach($users as $row185 :?>
149                         <option value=<?= $row->id187 ?>"><?=$row->firstname?> <?=$row->lastname?></option>
150                         <?php endforeach;?>
151                     </select>
152                 </div>
153                 <div class="form-group">
154                     <label>Researchers<i class="glyphicon glyphicon-asterisk" style="color:red"></i></label>
155                     <select multiple class="form-control" name="researchers[]" id="researchers" required="required">
156                         <?php foreach($users as $row195 :?>
157                             <option value=<?= $row->id196 ?>"><?=$row->firstname?> <?=$row->lastname?></option>
158                             <?php endforeach;?>
159                         </select>
160                     </div>
161                 </div>
162                 <div class="box-footer">
163                     <center>
164                         <button type="button" class="btn btn-primary" data-toggle="modal" data-target="#myModal">Add</button>
165                         <button type="reset" class="btn btn-default">Clear</button>
166                     </center>
167                 </div>
168             </div>
169         </div>
170     <div class="modal fade" id="myModal" tabindex="-1" role="dialog" aria-labelledby="myModalLabel" aria-hidden="true">
171         <div class="modal-dialog">
172             <div class="modal-content">
173                 <div class="modal-header">
174                     <button type="button" class="close" data-dismiss="modal" aria-label="Close"><span aria-hidden="true">&times;</span></button>
175                     <h4 class="modal-title">Are you200
176                         sure you want to add this project?</h4>
177                     </div>
178                 <div class="modal-footer">
179                     <button type="submit" class="bt214 />
```

Listing 28: Projects/edit.php

```

1 <!DOCTYPE html>
2 <html>
3 <head>
4     <meta charset="UTF-8">
5     <title>IMBB BSSMS | Dashboard</title>
6     <meta content="width=device-width, initial-scale=1, maximum-scale=1, user-scalable=no" name="viewport">
7     <link href=<?php echo base_url("public_html/vendor/bootstrap/css/bootstrap.css"); ?>
8         <rel="stylesheet" type="text/css" />
9     <link href=<?php echo base_url("public_html/vendor/plugins/multiselect/css/multi-select.css"); ?>
10        <rel="stylesheet" type="text/css" />
11     <link href=<?php echo base_url("public_html/vendor/plugins/datatables/dataTables.bootstrap.css"); ?>
12        <rel="stylesheet" type="text/css" />
13     <link href=<?php echo base_url("public_html/vendor/adminlte/css/AdminLTE.min.css"); ?>
14        <rel="stylesheet" type="text/css" />
15     <link href=<?php echo base_url("public_html/assets/css/system.css"); ?>
16         <rel="stylesheet" type="text/css" />
17     <!--[if lt IE 9]>
18         <script src="https://oss.maxcdn.com/html5shiv/3.7.2/html5shiv.min.js"></script>
19         <script src="https://oss.maxcdn.com/respond/1.4.2/respond.min.js"></script>
20     <![endif]-->
21     <body class="skin-blue sidebar-mini">
22         <div class="wrapper">
23             <header class="main-header">
24                 <a href=<?= base_url('dashboard'); ?>
25                     <= logo">
26                     <span class="logo-mini"><b>BSS</b>MS</span>
27                     <span class="logo-lg"><b>IMBB BSSMS</b></span>
28                 </a>
29                 <nav class="navbar navbar-static-top" role="navigation">
30                     <a href="#" class="sidebar-toggle" data-toggle="offcanvas" role="button">
31                         <span class="sr-only">Toggle navigation</span>
32                     </a>
33                     <div class="nav navbar-custom-menu">
34                         <ul class="nav navbar-nav">
35                             <li class="dropdown user user-menu">
36                                 <a href="#" class="dropdown-toggle" data-toggle="dropdown">
37                                     <img src=<?= base_url("public_html/vendor/adminlte/img/avatar." />
```

```

        png"); ?>" class="user-image" alt="User
Image"/>
38     <span class="hidden-xs"><?= $this->session->userdata('logged_in')[ 'firstname']; ?></span>          102
39         </a>                                              104
40         <ul class="dropdown-menu">                            105
41             <li class="user-header">                            106
42                 <img src=<?= base_url("public_html/vendor/adminlte/img/avatar.png"); ?>" class="img-circle" alt="User
Image" />          107
43                     <p>                                         108
44                         <?= $this->session->userdata('logged_in')[ 'fullname']; ?>          110
45                         <small style="color:#00c0ef;">          111
46                         <?= ($this->session->userdata('logged_in')[ 'is_sysadmin' ] ? 'System Administrator' : '') ?></small> 112
47                     </p>                                              113
48                 </li>                                              114
49                 <li class="user-footer">                            115
50                     <div class="pull-right">                            116
51                         <a href=<?= base_url('authenticate/logout'); ?>" class="btn btn-default btn-flat">Sign out</a> 117
52                     </div>                                              118
53                 </li>                                              119
54             </ul>                                              120
55         </li>                                              121
56         <a href="#" data-toggle="control-sidebar"><i class="fa fa-gears"></i></a>          123
57     </li>                                              124
58 </ul>                                              125
59 </div>                                              126
60 </nav>                                              127
61 </header>                                              128
62 <aside class="main-sidebar">                            129
63     <section class="sidebar">                            130
64         <div class="user-panel">                            131
65             <div class="pull-left image">          132
66                 <img src=<?= base_url("public_html/vendor/adminlte/img/avatar.png"); ?>" class="img-circle" alt="User Image" /> 133
67             </div>                                              134
68             <div class="pull-left info">          135
69                 <p><?= $this->session->userdata('logged_in')[ 'fullname']; ?></p>          136
70             </div>                                              137
71         </div>                                              138
72         <ul class="sidebar-menu">                            139
73             <li class="header"></li>          140
74             <li class="active">          141
75                 <a href="#"><i class='glyphicon glyphicon-tasks'></i> <span>Projects </span></a>          142
76                 <ul class="treeview-menu">          143
77                     <li><a href=<?= base_url('projects/create'); ?>"><i class='glyphicon glyphicon-chevron-right'></i>New Project</a></li> 144
78                     <li class="active"><a href=<?= base_url('projects'); ?>"><i class='glyphicon glyphicon-chevron-right'></i>Project List </a></li>          145
79                     </ul>                                              146
80             </li>                                              147
81             <li class="treeview">          148
82                 <a href="#"><i class='glyphicon glyphicon-tasks'></i></a> <span>Users </span></a>          149
83                 <ul class="treeview-menu">          150
84                     <li><a href=<?= base_url('users/create'); ?>"><i class='glyphicon glyphicon-chevron-right'></i>New User</a></li> 151
85                     <li><a href=<?= base_url('users'); ?>"><i class='glyphicon glyphicon-chevron-right'></i>User List </a></li>          152
86                     </ul>                                              153
87             </li>                                              154
88             <a href=<?= base_url('systemlogs'); ?>"><i class='glyphicon glyphicon-tasks'></i> <span>Audit Trail </span></a>          155
89         </ul>                                              156
90     </div>                                              157
91 </aside>                                              158
92 <div class="content-wrapper">                            159
93     <section class="content-header">          160
94         <h1>                                         161
95             <?php echo $pageHeader; ?>          162
96             <small></small>          163
97         </h1>                                              164
98         <ol class="breadcrumb">          165
99             <li><a href="#"><i class="fa fa-dashboar

```

```

158         <?php endforeach;?>          192      </div>
159         </select>                   193      </form>
160     </div>                      194      </div>
161     <div class="form-group">        195      </div>
162     <label>Choose researcher(s)  196      </div>
163     ADD</label>                197      </section>
164     <select multiple class="form-198      </div>
165     control" name="researchersToAdd[]" id="199      </div>
166     researchersToAdd">          200      <footer class="main-footer">
167     >?><?=$row->firstname?> <?=$row->201      <div class="pull-right hidden-xs">
168     lastname?></option>          202      <strong>Copyright &copy; 2015 <a href="#">
169     <?php endforeach;?>           203      IMBB</a></strong> All rights reserved.
170     </select>                   204      <img src=<?php echo base_url("public_html/
171     </div>                      205      vendor/img/IMBB.png"); ?>" width="35px"
172     </div>                      206      <img src=<?php echo base_url("public_html/
173     <div class="box-footer">        207      vendor/img/UPM.Logo.png"); ?>" width="35
174     <center>                    208      px"></img>
175     <button type="button" class="btn 209      <img src=<?php echo base_url("public_html/
176     btn-primary" data-toggle="modal" data-210      vendor/img/NIH.Logo.png"); ?>" width="35
177     target="#myModal">Update</button> 211      px"></img>
178     <button type="reset" class="btn 212      <script src=<?php echo base_url("public_html/
179     btn-default">Clear</button>    213      vendor/bootstrap/js/bootstrap.min.js");
180     </center>                   214      ?>" type="text/javascript"></script>
181     </div>                      215      <script src=<?php echo base_url("public_html/
182     <div class="modal fade" id="216      vendor/plugins/multiselect/js/jquery.
183     projectModal" tabindex="-1" role="dialog" 217      multi-select.js"); ?>" type="text/
184     aria-labelledby="myModalLabel" aria-218      javascript"></script>
185     hidden="true">              219      <script src=<?php echo base_url("public_html/
186     <div class="modal-dialog">        220      vendor/adminlte/js/app.min.js"); ?>" type
187     <div class="modal-content">       221      ="text/javascript"></script>
188     <div class="modal-header">        222      <script src=<?php echo base_url("public_html/
189     <button type="button" class="223      vendor/plugins/datatables/jquery.
190     close" data-dismiss="modal" aria-label="224      dataTables.min.js"); ?>" type="text/
191     Close"><span aria-hidden="true">&times;</225      javascript"></script>
192     span></button>             226      </html>
193     <h4 class="modal-title">Are you 227      </div>
194     sure you want to update the existing 228      <body class="skin-blue sidebar-mini">
195     project?</h4>               229      <div class="wrapper">
196     </div>                      230      <header class="main-header">
197     <div class="modal-footer">       231      <a href=<?= base_url('dashboard'); ?>" class
198     <button type="submit" class="232      = "logo">
199     btn btn-primary" id="addProjectSubmit"> 233      <span class="logo-mini"><b>BSS</b>MS</span>
200     Update Project             234      <span class="logo-lg"><b>IMBB BSSMS</b></span>
201     </button>                   235      </a>
202     <button type="button" class="236      <nav class="navbar navbar-static-top" role="navigation">
203     btn btn-default" data-dismiss="modal"> 237      <a href="#" class="sidebar-toggle" data-
204     Close</button>             238      toggle="offcanvas" role="button">
205     </div>                      239      <span class="sr-only">Toggle navigation
206     </div>                      240      </span>
207     </div>                      241      </a>
208     <link href=<?php echo base_url("242      <div class="navbar-custom-menu">
209     public_html/vendor/bootstrap/css/bootstrap.css"); ?>" 243      <ul class="nav navbar-nav">
210     rel="stylesheet" type="text/css" /> 244      <li class="dropdown user user-menu">
211     <link href="https://maxcdn.bootstrapcdn.com/ 245      <!-- Menu Toggle Button -->
212     font-awesome/4.3.0/css/font-awesome.min.css" 246      <a href="#" class="dropdown-toggle" data-
213     rel="stylesheet" type="text/css" /> 247      toggle="dropdown">
214     <link href="https://code.ionicframework.com/ionicons/2.0.1/css/ionicons.min.css" 248      <img src=<?= base_url("public_html/vendor/adminlte/img/avatar.png"); ?>" class="user-image" alt="User
215     rel="stylesheet" type="text/css" /> 249      Image"/>
216     <link href=<?php echo base_url("public_html/vendor/adminlte/css/AdminLTE.min.css"); ?>" 250      <span class="hidden-xs"><?= $this->session->userdata('logged_in')[ 'firstname' ]; ?></span>
217     rel="stylesheet" type="text/css" /> 251      </a>
218     <link href=<?php echo base_url("public_html/vendor/plugins/iCheck/square/blue.css"); ?>" 252      <ul class="dropdown-menu">
219     rel="stylesheet" type="text/css" /> 253      <li class="user-header">
220     <link href=<?php echo base_url("public_html/vendor/adminlte/css/skins/skin-blue.css"); ?>" 254      <img src=<?= base_url("public_html/vendor/adminlte/img/avatar.png"); ?>" class="img-circle" alt="User
221     rel="stylesheet" type="text/css" /> 255      Image" />
222     <!--[if lt IE 9]> 256      <p>
223     <script src="https://oss.maxcdn.com/html5shiv/3.7.2/html5shiv.min.js"></script> 257      <?= $this->session->userdata('logged_in')[ 'fullname' ]; ?>
224     <!--[endif]--> 258      </p>

```

Listing 29: Projects/index.php

```

1 <!DOCTYPE html>
2 <html>
3 <head>
4   <meta charset="UTF-8">
5   <title>IMBB BSSMS | Dashboard</title>
6   <meta content="width=device-width, initial-scale=1, maximum-scale=1, user-scalable=no" name="viewport">
7   <link href=<?php echo base_url("public_html/vendor/bootstrap/css/bootstrap.css"); ?>" 26
8     rel="stylesheet" type="text/css" /> 27
9   <link href="https://maxcdn.bootstrapcdn.com/font-awesome/4.3.0/css/font-awesome.min.css" 28
10  rel="stylesheet" type="text/css" /> 29
11  <link href="https://code.ionicframework.com/ionicons/2.0.1/css/ionicons.min.css" rel="stylesheet" 30
12  type="text/css" /> 31
13  <link href=<?php echo base_url("public_html/vendor/adminlte/css/AdminLTE.min.css"); ?>" 32
14  rel="stylesheet" type="text/css" /> 33
15  <!--[if lt IE 9]> 34
16  <script src="https://oss.maxcdn.com/html5shiv/3.7.2/html5shiv.min.js"></script> 35
17  <script src="https://oss.maxcdn.com/respond/1.4.2/respond.min.js"></script> 36
18  <!--[endif]--> 37
19  </head>
20  <body class="skin-blue sidebar-mini">
21  <div class="wrapper">
22  <header class="main-header">
23  <a href=<?= base_url('dashboard'); ?>" class="logo">
24  <span class="logo-mini"><b>BSS</b>MS</span>
25  <span class="logo-lg"><b>IMBB BSSMS</b></span>
26  </a>
27  <nav class="navbar navbar-static-top" role="navigation">
28  <a href="#" class="sidebar-toggle" data-toggle="offcanvas" role="button">
29  <span class="sr-only">Toggle navigation
30  </span>
31  </a>
32  <div class="navbar-custom-menu">
33  <ul class="nav navbar-nav">
34  <li class="dropdown user user-menu">
35  <!-- Menu Toggle Button -->
36  <a href="#" class="dropdown-toggle" data-toggle="dropdown">
37  <img src=<?= base_url("public_html/vendor/adminlte/img/avatar.png"); ?>" class="user-image" alt="User
38  Image"/>
39  <span class="hidden-xs"><?= $this->session->userdata('logged_in')[ 'firstname' ]; ?></span>
40  </a>
41  <ul class="dropdown-menu">
42  <li class="user-header">
43  <img src=<?= base_url("public_html/vendor/adminlte/img/avatar.png"); ?>" class="img-circle" alt="User
44  Image" />
45  <p>
46  <?= $this->session->userdata('logged_in')[ 'fullname' ]; ?>
47  </p>

```

```

45           <small style="color:#00c0ef;">113
46             >?=&= ( $this->session->userdata('logged_in')14
47               [ 'is_sysadmin' ] ? 'System Administrator15
48               : ' ) ?></small>15
49             </p>16
50             </li>17
51             <li class="user-footer">18
52               <div class="pull-right">19
53                 <a href=<?= base_url('120
54                   authenticate/logout');?>> class="btn btn-121
55                   default btn-flat">Sign out</a>122
56               </div>123
57             </li>124
58           </ul>125
59         </li>126
60       <a href="#" data-toggle="control-127
61         sidebar"><i class="fa fa-gears"></i></a>127
62     </li>128
63   </ul>129
64 </div>130
65 <section class="sidebar">131
66   <div class="user-panel">132
67     <div class="pull-left image">132
68       134
71     </div>135
72     <div class="pull-left info">136
73       <p><?= $this->session->userdata('137
74         logged_in')[ 'fullname' ]; ?></p>137
75     </div>138
76   </div>139
77   <ul class="sidebar-menu">140
78     <li class="header"></li>141
79     <li class="active">142
80       <a href="#"><i class='glyphicon glyphicon-143
81         tasks'></i> <span>Projects </144
82         span></a>145
83       <ul class="treeview-menu">146
84         <li><a href=<?= base_url('147
85           projects/create');?>><i class='glyphicon glyphicon-chevron-right'></i>New Project148
86         </a></li>149
87         <li class="active"><a href="150
88           <?= base_url('projects');?>><i class='151
89             glyphicon glyphicon-chevron-right'></i>152
90             Project List </a></li>153
91           </ul>154
92         </li>155
93       <li class="treeview">156
94         <a href="#"><i class='glyphicon glyphicon-157
95           tasks'></i></a> <span>Users </159
96           span></i></a>160
97         <ul class="treeview-menu">158
98           <li><a href=<?= base_url('161
99             users/create');?>><i class='glyphicon glyphicon-chevron-right'></i>New User </a>161
100            </li>162
101            <li><a href=<?= base_url('163
102              users');?>><i class='glyphicon glyphicon-164
103                chevron-right'></i>User List </a></li>165
104            </ul>166
105          </li>167
106        </div>168
107      <div class="content-wrapper">169
108        <section class="content-header">170
109          <h1><?php echo $pageHeader; ?>171
110          <small></small>172
111        </h1>173
112        <ol class="breadcrumb">174
113          <li><a href="#"><i class="fa fa-175
114            dashboard"></i> <?php echo $pageTitle;176
115            ?></a></li>177
116          <li class="active"><?php echo178
117            $pageHeader; ?></li>179
118        </ol>180
119      <section class="content">181
120        <div class="row">182
121          <div class="col-xs-12">183
122            <div class="box">184
123              <div class="box-header">185
124                <h3 class="box-title">Projects </h88
125              >186
126            </div><!-- .box--header -->187
127          </div>188
128        </div>189
129      </div>190

```

```

        btn-primary" id="submit">Assign Users</div>
191    button>                                211 <script src=<?php echo base_url("public_html/
        <button type="button" class="btn-default" data-dismiss="modal">Close  vendor/plugins/jQuery/jQuery - 2.1.4.min.js
        </button>                                         ?>></script>
192        </div>                                     212 <script src=<?php echo base_url("public_html/
        </form>                                         vendor/bootstrap/js/bootstrap.min.js");
193        </div>                                     213 <script src=<?php echo base_url("public_html/
        </div>                                         vendor/adminlte/js/app.min.js"); ?>" type
194        </div>                                     214 <script src=<?php echo base_url("public_html/
        </div>                                         vendor/adminlte/js/app.min.js"); ?>" type
195        </div>                                     215 <script src=<?php echo base_url("public_html/
        </div>                                         vendor/plugins/datatables/jquery.
196        </div>                                     216 <script src=<?php echo base_url("public_html/
        </div>                                         vendor/plugins/datatables/dataTables.
197        </div>                                     217 <script type="text/javascript">
        </div>                                         width="35px" 218 $(function () {
198    </div>                                     219     $("#example1").DataTable({
199 <div class="main-footer">                220         "columnDefs": [
200    <div class="pull-right hidden-xs">          221             { "orderable": false , "targets": 0 }
201        <strong>Copyright &copy; 2015 <a href="#"> 222     });
202        IMBB</a>.</strong> All rights reserved. 223     });
203    <img src=<?php echo base_url("public_html/ 224     </script>
204        vendor/img/IMBB.png"); ?>" width="35px" 225 </body>
205    </img>                                     226 </html>
206    <img src=<?php echo base_url("public_html/ 227
207        vendor/img/UPM.Logo.png"); ?>" width="35 228
208    px"></img>                               229
209 </div>                                     230
209 </div>
```

Listing 30: Reports/export.php

```

1 <!DOCTYPE html>
2 <html>
3 <head>
4     <title>Print Invoice</title>
5     <link href=<?php echo base_url(" 41 <div id="title">
        public_html/vendor/bootstrap/css/ 42     <h4><?= $this->session->userdata('
        bootstrap.css"); ?>" rel="stylesheet" 43         logged_in') ['projectName']; ?> Specimen
        type="text/css" /> 44     Samples Report</h4>
6     <link href=<?php echo base_url(" 45 <br />
        public_html/vendor/plugins/datatables/ 46     <div class="row">
        dataTables.bootstrap.css"); ?>" rel=" 47         <div class="col-xs-12">
        stylesheet" type="text/css" /> 48             <div class="box">
7     <style> 49                 <div class="box-header">
8         body{ 50                     <h5 class="box-title">Number of
9             margin: 20px; 51                     Specimen Samples per Type</h5>
10            } 52             </div><!-- /.box-header -->
11            #header { 53             <div class="box-body">
12                line-height: 5px; 54                 <table id="report1" class="table
13                text-align: center; 55                     border="1" border-collapse="collapse">
14            } 56                     <thead>
15            #title { 57                         <th>Specimen Type</th>
16                text-align: center; 58                         <th>Number of Specimen Samples
17                font-size: 24px; 59                     </th>
18            } 60                     <?php foreach ($types as $row) :
19            .class 61                         <tr>
20            #wrapper 62                             <td><?= $row->name?></td>
21            { 63                             <td><?= $counts[$row->id
22                width:180mm; 64                         -1]?></td>
23                margin:0 15mm; 65                         </tr>
24            } 66                         <?php endforeach; ?>
25            </style> 67             </tbody>
26        </head> 68             </table>
27        <body> 69             </div>
28            <div class="wrapper"> 70             </div>
29                <div id="header"> 71             </div>
30                    <p>National Institute of Health</p> 72             </div>
31                    <p>Institute of Molecular Biology and 73             </body>
32                    Biotechnology</p> 74             </html>

```

Listing 31: Reports/index.php

```

1 <!DOCTYPE html>
2 <html>
3 <head>
4     <meta charset="UTF-8">
5     <title>IMBB BSSMS | Dashboard</title>
6     <meta content='width=device-width, initial-
        scale=1, maximum-scale=1, user-scalable= 13
        no' name='viewport'>
7     <link href=<?php echo base_url("public_html
        /vendor/bootstrap/css/bootstrap.css"); ?> 14
        rel="stylesheet" type="text/css" />
8     <link href="https://maxcdn.bootstrapcdn.com/
        font-awesome/4.3.0/css/font-awesome.min.
        css" rel="stylesheet" type="text/css" /> 15
9     <link href="https://code.ionicframework.com/16
        ionicons/2.0.1/css/ionicons.min.css" rel=
        "stylesheet" type="text/css" />
10    <link href=<?php echo base_url("public_html/17
        vendor/plugins/datatables/dataTables.

```

- bootstrap.css"); ?>" rel="stylesheet" type="text/css" />
- <link href=<?php echo base\_url("public\_html/vendor/adminlte/css/AdminLTE.min.css"); ?>" rel="stylesheet" type="text/css" />
- <link href=<?php echo base\_url("public\_html/vendor/plugins/iCheck/square/blue.css"); ?>" rel="stylesheet" type="text/css" />
- <link href=<?php echo base\_url("public\_html/vendor/adminlte/css/skins/skin-blue.css"); ?>" rel="stylesheet" type="text/css" />
- <link href=<?php echo base\_url("public.html/assets/css/system.css"); ?>" rel="stylesheet" type="text/css" />
- <!--[if lt IE 9]>
- <script src="https://oss.maxcdn.com/html5shiv/3.7.2/html5shiv.min.js"></script>
- <script src="https://oss.maxcdn.com/respond

```

18 <![endif]-->
19 </head>
20
21 <body class="skin-blue sidebar-mini">
22 <div class="wrapper">
23 <header class="main-header">
24   <a href="#">=<= base_url('dashboard');?>> class="logo">
25     <span class="logo-mini"><b>BSS</b>MS</span>
26     <span class="logo-lg"><b>IMBB BSSMS</b></span>
27   </a>
28   <nav class="navbar navbar-static-top" role="navigation">
29     <a href="#" class="sidebar-toggle" data-toggle="offcanvas" role="button">
30       <span class="sr-only">Toggle navigation</span>
31     </a>
32     <div class="navbar-custom-menu">
33       <ul class="nav navbar-nav">
34         <li class="dropdown user user-menu">
35           <a href="#" class="dropdown-toggle" data-toggle="dropdown">
36             =<= base_url("public_html/vendor/adminlte/img/avatar.png");?>> class="user-image" alt="User Image"/>
37             <span class="hidden-xs"><=? $this->session->userdata('logged_in')[ 'firstname'] ; ?></span>
38           </a>
39           <ul class="dropdown-menu">
40             <li class="user-header">
41               =<= base_url("public_html/vendor/adminlte/img/avatar.png");?>> class="img-circle" alt="User Image" />
42               <p>
43                 <=? $this->session->userdata('logged_in')[ 'fullname'] ; ?>
44                 <small style="color:#00c0ef;">
45                   <=? $this->session->userdata('logged_in')[ 'usertype'] ; ?></small>
46               </p>
47               <li class="user-footer">
48                 <div class="pull-left">
49                   <a href="#">=<= base_url('dashboard');?>> class="btn btn-default btn-flat">Dashboard</a>
50                 </div>
51                 <div class="pull-right">
52                   <a href="#">=<= base_url('authenticate/logout');?>> class="btn btn-default btn-flat">Sign out</a>
53                 </div>
54               </li>
55             </ul>
56           </li>
57         <li>
58           <a href="#" data-toggle="control-sidebar"><i class="fa fa-gears"></i></a>
59         </li>
60       </ul>
61     </div>
62   </nav>
63 </header>
64 <aside class="main-sidebar">
65   <section class="sidebar">
66     <div class="user-panel">
67       <div class="pull-left image">
68         =<= base_url("public_html/vendor/adminlte/img/avatar.png");?>> class="img-circle" alt="User Image" />
69       </div>
70       <div class="pull-left info">
71         <p><=? $this->session->userdata('logged_in')[ 'fullname'] ; ?></p>
72         <span class="glyphicon glyphicon-user" style="margin-left:5%; color:#00c0ef;"><=? $this->session->userdata('logged_in')[ 'usertype'] ; ?></span>
73       </div>
74     </div>
75     <ul class="sidebar-menu">
76       <li class="header"><=? $this->session->userdata('logged_in')[ 'projectName'] ; ?></li>
77       <li>
78         <a href="#">=<= base_url('glyphicon-tasks');?>> class="fa fa-angle-left pull-right" ><i class="glyphicon glyphicon-tasks"></i><span>Project</span>><i class="fa fa-angle-left pull-right" ></i></a>
79         <ul class="treeview-menu">
80           <li><a href="#">=<= base_url('specimen/index');?>> class="glyphicon glyphicon-chevron-right" ><i class="glyphicon glyphicon-chevron-right" ></i>Update</a></li>
81         </ul>
82       </li>
83     </ul>
84   </section>
85 </aside>
86 <div class="content-wrapper">
87   <section class="content-header">
88     <h1>
89       <?php echo $pageHeader; ?>
90       <small></small>
91     </h1>
92     <ol class="breadcrumb">
93       <li><a href="#">=<= base_url('reports');?>> class="glyphicon glyphicon-tasks" ><i class="glyphicon glyphicon-tasks" ></i>Export to PDF</a></li>
94     </ol>
95   </section>
96   <?php if( iset( $message ) ) : ?>
97   <div class="col-xs-offset-0 col-xs-12">
98     <div class="alert alert-success alert-dismissible">
99       <button type="button" class="close" data-dismiss="alert" aria-hidden="true"> </button>
100      <h4><i class="icon fa fa-check"></i> <?php echo $message; ?></h4>
101    </div>
102  </div>
103  <?php endif; ?>
104
105  <section class="content">
106    <div class="row">
107      <div class="col-xs-12">
108        <div class="box">
109          <div class="box-header">
110            <h5 class="box-title">Number of Specimen Samples per Type</h5>
111            <div class="box-body">
112              <table id="example1" class="table-bordered table-hover">
113                <thead>
114                  <tr>
115                    <th>Specimen Type</th>
116                    <th>Number of Specimen Samples</th>
117                </thead>
118                <tbody>
119                  <tr>
120                    <td>Type A</td>
121                    <td>100</td>
122                  </tr>
123                  <tr>
124                    <td>Type B</td>
125                    <td>200</td>
126                  </tr>
127                  <tr>
128                    <td>Type C</td>
129                    <td>300</td>
130                  </tr>
131                  <tr>
132                    <td>Type D</td>
133                    <td>400</td>
134                  </tr>
135                  <tr>
136                    <td>Type E</td>
137                    <td>500</td>
138                  </tr>
139                </tbody>
140              </table>
141            </div>
142          </div>
143        </div>
144      </div>
145    </div>
146  </section>
147
```

```

139      </th>
140      </tr>
141      </thead>
142      <tbody>
143          <?php foreach($types as $row) {
144              <tr>
145                  <td><?= $row->name?></td>
146                  <td><?= $counts[$row->id
147                      -1]?></td>
148                  </tr>
149          <?php endforeach;?>
150      </tbody>
151      </table>
152  </div>
153  </div>
154
155  </section>
156</div>
157<footer class="main-footer">
158    <div class="pull-right hidden-xs">
159        <strong>Copyright &copy; 2015 <a href="#">
160            IMBB</a></strong> All rights reserved.
161    </div>
162    <img src=<?php echo base_url("public_html/
163        vendor/img/IMBB.png"); ?>" width="35px"
164        ></img>
165    <img src=<?php echo base_url("public_html/
166        vendor/img/UPM_Logo.png"); ?>" width="35px"
167        ></img>
168    <script src=<?php echo base_url("public_html/
169        vendor/plugins/jQuery/jquery-2.1.4.min.js"
170        ); ?>></script>
171    <script src=<?php echo base_url("public_html/
172        vendor/bootstrap/js/bootstrap.min.js");
173        ?>" type="text/javascript"></script>
174    <script src=<?php echo base_url("public_html/
175        vendor/adminlte/js/app.min.js"); ?>" type
176        ="text/javascript"></script>
177    <script src=<?php echo base_url("public_html/
178        vendor/plugins/datatables/jquery.
179        dataTables.min.js"); ?>" type="text/
180        javascript"></script>
181    <script src=<?php echo base_url("public_html/
182        vendor/plugins/datatables/dataTables.
183        bootstrap.min.js"); ?>" type="text/
184        javascript"></script>
185    <script>
186        $(function () {
187            $('#example1').DataTable();
188        });
189    </script>
190</body>
191</html>

```

Listing 32: SingleProject/edit.php

```

1 <!DOCTYPE html>
2 <html>
3 <head>
4     <meta charset="UTF-8">
5     <title>IMBB BSSMS | Dashboard</title>
6     <meta content='width=device-width, initial-
       scale=1, maximum-scale=1, user-scalable=
       no' name='viewport'>
7     <link href=<?php echo base_url("public_html/
8         vendor/bootstrap/css/bootstrap.css"); ?>
9         rel="stylesheet" type="text/css" />
10    <link href="https://maxcdn.bootstrapcdn.com/
11        font-awesome/4.3.0/css/font-awesome.min.
12        css" rel="stylesheet" type="text/css" />
13    <link href="https://code.ionicframework.com/
14        ionicons/2.0.1/css/ionicons.min.css" rel=
15        "stylesheet" type="text/css" />
16    <link href=<?php echo base_url("public_html/
17        vendor/plugins/datatables/dataTables.
18        bootstrap.css"); ?>" rel="stylesheet"
19        type="text/css" />
20    <link href=<?php echo base_url("public_html/
21        vendor/adminlte/css/AdminLTE.min.css");
22        ?>" rel="stylesheet" type="text/css" />
23    <link href=<?php echo base_url("public_html/
24        vendor/plugins/iCheck/square/blue.css");
25        ?>" rel="stylesheet" type="text/css" />
26    <link href=<?php echo base_url("public_html/
27        assets/css/system.css"); ?>" rel=""
28        stylesheets" type="text/css" />
29    <!--[if lt IE 9]>
30    <script src="https://oss.maxcdn.com/
31        html5shiv/3.7.2/html5shiv.min.js"></script>
32    <![endif]-->
33    </head>
34
35<body class="skin-blue sidebar-mini">
36<div class="wrapper">
37<header class="main-header">
38    <a href=<?= base_url('dashboard'); ?>" class
39        = "logo">
40        <span class="logo-mini"><b>BSS</b>MS</span
41        >
42        <span class="logo-lg"><b>IMBB BSSMS</b></
43        span>
44    </a>
45    <nav class="navbar navbar-static-top" role="
46        navigation">
47        <a href="#" class="sidebar-toggle" data-
48            toggle="offcanvas" role="button">
49            <span class="sr-only">Toggle navigation
50            </span>
51        </a>
52        <div class="navbar-custom-menu">
53            <ul class="nav navbar-nav">
54                <li class="dropdown user user-menu">
55                    <a href="#" class="dropdown-toggle"
56                        ><span class="dropdown-toggle user-menu">
57                            <img src=<?=
58                                base_url("public_html/
59                                    vendor/adminlte/img/avatar.png");
60                                ?>" alt="User
61                                Image"/>
62                            <span class="hidden-xs"><?= $this
63                                ->session->userdata('logged_in')['
64                                firstname']; ?></span>
65                            </a>
66                            <ul class="dropdown-menu">
67                                <li class="user-header">
68                                    <img src=<?=
69                                        base_url("public_html/
70                                            vendor/adminlte/img/avatar.
71                                            png");
72                                        ?>" alt="User
73                                Image" />
74                                <p><?= $this->session->userdata(
75                                    'loggedin')[ 'fullname'];
76                                    ?></p>
77                                <small style="color:#00c0ef;">
78                                    <?= $this->session->userdata('logged_in'
79                                    )[ 'usertype'];
80                                    ?></small>
81                                </p>
82                                </li>
83                                <li class="user-footer">
84                                    <div class="pull-left">
85                                        <a href=<?= base_url(
86                                            'dashboard'); ?>" class="btn
87                                            btn-default
88                                            btn-flat">Dashboard</a>
89                                    </div>
90                                    <div class="pull-right">
91                                        <a href=<?= base_url(
92                                            'authenticate/logout'); ?>" class="btn
93                                            btn-default
94                                            btn-flat">Sign out</a>
95                                    </div>
96                                </li>
97                            </ul>
98                        </li>
99                    <a href="#" data-toggle="control-
100                        sidebar"><i class="fa fa-gears"></i></a>
101                </li>
102            </ul>
103        </div>
104    </nav>
105</header>
106<aside class="main-sidebar">
107<section class="sidebar">
108    <div class="user-panel">
109        <div class="pull-left image">
110            <img src=<?=
111                base_url("public_html/
112                    vendor/adminlte/img/avatar.png");
113                    ?>" alt="User Image" />
114        </div>
115        <div class="pull-left info">
116            <p><?= $this->session->userdata(
117                'loggedin')[ 'fullname'];
118                ?></p>
119            <span class="glyphicon glyphicon-user">
120                <?= $this->session->userdata('logged_in')[ 'usertype'];
121                ?></span>
122        </div>
123    </div>
124    <ul class="sidebar-menu">
125        <li class="header"><?= $this->session

```

```

    ->userdata( 'logged_in' ) [ 'projectName' ]; 130
    ?></li>
    <li class=" active">
        <a href="#"><i class='glyphicon glyphicon-tasks'></i> <span>Project </span>33
    > <i class="fa fa-angle-left pull-right" 134
    ></i></a>
        <ul class="treeview-menu"> 135
            <li><a href="#"><?= base_url(' 136
                singleproject/index');?>"><i class=",
                glyphicon glyphicon-chevron-right "></i> 137
            About</a></li>
            <li class=" active" style=" display 138
            :<?=($this->session->userdata('logged_in 139
            ') [ 'usertypeId' ] == 1 ? 'none' : '')?>"><
            a href="#"><?= base_url('singleproject/edit 140
            ');?>"><i class='glyphicon glyphicon- 141
            chevron-right '></i>Update</a></li>
            </ul> 141
        </li> 142
        <li>
            <a href="#"><i class='glyphicon glyphicon-tasks'></i> <span>Specimen </span> 143
            <i class="fa fa-angle-left pull-right" 144
            ></i></a>
            <ul class="treeview-menu"> 144
                <li style=" display:<?=($this-> 145
                session->userdata('logged_in') [ ' 146
                usertypeId' ] == 1 ? 'none' : '')?>"><a 147
                href="#"><?= base_url('specimen/create');?>"><i 147
                class="glyphicon glyphicon-chevron- 148
                right "></i>New Sample</a></li>
                <li><a href="#"><?= base_url(' 148
                specimen/index');?>"><i class='glyphicon 149
                glyphicon-chevron-right '></i>Sample List 150
            </a></li>
            </ul> 151
        </li>
        <li>
            <a href="#"><i class='glyphicon glyphicon-tasks'></i> <span>Access </span> 152
            <i class="fa fa-angle-left pull-right" 153
            ></i></a>
            <ul class="treeview-menu"> 154
                <li><a href="#"><?= base_url(' 155
                    specimen/access');?>"><i class='glyphicon 156
                    glyphicon-chevron-right '></i>Sample 157
                Access</a></li>
                <li style=" display:<?=($this-> 158
                session->userdata('logged_in') [ ' 159
                usertypeId' ] == 1 ? 'none' : '')?>"><a 160
                href="#"><?= base_url('specimen/logs');?>"><i 161
                i class="glyphicon glyphicon-chevron- 162
                right "></i>Sample Access Logs</a></li>
            </ul> 163
        </li> 164
        <li style=" display:<?=($this->session 165
        ->userdata('logged_in') [ 'usertypeId' ] == 1 ? 'none' : '')?>">
        <a href="#"><?= base_url('reports');?>"><i 166
        ><span>Reports</span></a> 167
        </li> 168
    </ul> 169
</section>
</aside> 170
<div class="content-wrapper">
    <section class="content-header">
        <h1>
            <?php echo $pageHeader; ?> 171
            <small></small>
        </h1>
        <ol class="breadcrumb">
            <li><a href="#"><i class="fa fa- 172
            dashboard"></i> <?php echo $pageTitle; 173
            ?></a></li>
            <li class=" active"><?php echo 174
            $pageHeader; ?></li>
        </ol>
    </section> 175
    <?php if( isset( $message ) ) : ?> 180
    <div class="col-xs-offset-0 col-xs-12"> 181
    <div class="alert alert-danger alert- 182
    dismissible">
        <button type="button" class="close" data- 183
        dismiss="alert" aria-hidden="true"> </ 184
        button>
        <h4><i class="icon fa fa-ban"></i> <?php 185
        echo $message; ?></h4>
    </div>
    </div>
    <?php endif; ?>
    <!-- Main content -->
    <section class="content">
        <div class="row">
            <div class="col-md-12">

```

```

<div class="box box-primary">
    <div class="box-header">
        <h3 class="box-title">Project
        Information</h3>
    </div><!-- /.box-header -->
    <?php echo form_open('singleproject/
    update'); ?>
    <div class="box-body">
        <div class="form-group">
            <label for=" projectName">
            Project Name</label>
            <input type="text" class="form-
            control" id=" projectName" name="
            projectName" placeholder="Enter Project
            Name" value="<?= $project->name ?>"/>
        </div>
        <div class="form-group">
            <label for=" description">
            Description</label>
            <textarea class="form-control"
            id=" description" name=" description" rows="3"
            placeholder="Enter Description"><?=
            $project->description ?></textarea>
        </div>
        <div class="form-group">
            <label for=" startDate">Start
            Date</label>
            <input type="date" class="form-
            control" id=" startDate" name="startDate"
            value="<?= $project->start_date ?>"/>
        </div>
        <div class="form-group">
            <label for=" endDate">End Date
            </label>
            <input type="date" class="form-
            control" id=" endDate" name="endDate"
            value="<?= $project->end_date ?>"/>
        </div>
    </div>
    <div class="box-footer">
        <center>
            <button type="button" class="btn
            btn-primary" data-toggle="modal" data-
            target="#projectModal">Update</button>
            <button type="reset" class="btn
            btn-default">Clear</button>
        </center>
    </div>
    <div class="modal fade" id="
    projectModal" tabindex="-1" role="dialog"
    aria-labelledby="myModalLabel" aria-
    hidden="true">
        <div class="modal-dialog">
            <div class="modal-content">
                <div class="modal-header">
                    <button type="button" class=" 176
                    close" data-dismiss="modal" aria-label=" 177
                    Close"><span aria-hidden="true">&times;</
                    span></button>
                    <h4 class="modal-title">Are
                    you sure you want to update the existing
                    project?</h4>
                </div>
                <div class="modal-footer">
                    <button type="submit" class=" 178
                    btn btn-primary" id="addProjectSubmit">
                    Update Project
                    </button>
                    <button type="button" class=" 179
                    btn btn-default" data-dismiss="modal">
                    Close</button>
                </div>
            </div>
        </div>
        <div class="main-footer">
            <div class="pull-right hidden-xs">
                <strong>Copyright &copy; 2015 <a href="#">
                IMBB</a></strong> All rights reserved.
            </div>
            " width="35px"
            ></img>
            " width="35
            px"></img>
            " width="35
            px"></img>

```

```
px"></img>
191 </footer>                                = "text/javascript"></script>
192 </div>                                     197 <script src=<?php echo base_url("public_html/
193                                         vendor/plugins/datatables/jquery.
194 <script src=<?php echo base_url("public_html/
195                                         vendor/plugins/jQuery/jQuery -2.1.4.min.js");
196 <script src=<?php echo base_url("public_html/
197                                         vendor/plugins/datatables/dataTables.
198 <script src=<?php echo base_url("public_html/
199 <script src=<?php echo base_url("public_html/
200 <body>
201 </html>
```

Listing 33: SingleProject/index.php

```

glyphicon-tasks'></i> <span>Access</span> 149
    <i class="fa fa-angle-left pull-right"> 150
  ></i></a> 151
    <ul class="treeview-menu"> 152
      <li><a href="#=> base_url(' 153
specimen/access');?>"><i class="glyphicon 154
glyphicon-chevron-right"></i>Sample 155
Access</a></li> 156
      <li style="display:<?=( $this-> 157
session->userdata('logged_in'))[ ' 158
userTypeID' ] == 1 ? 'none' : '' )?>"><a 159
href="#=> base_url('specimen/logs');?>">< 160
i class="glyphicon glyphicon-chevron- 161
right"></i>Sample Access Logs</a></li> 161
    </ul> 162
    <li style="display:<?=( $this->session 163
->userdata('logged_in')[ 'userTypeID' ] == 164
1 ? 'none' : '' )?>"> 165
      <a href="#=> base_url('reports');?>"> 166
><i class="glyphicon glyphicon-tasks"></i> 167
  <span>Reports</span></a> 168
    </li> 169
  </ul> 170
</section> 171
</aside> 172
<div class="content-wrapper"> 173
  <section class="content-header"> 174
    <h1> 175
      <?php echo $pageHeader; ?>
      <small></small>
    </h1> 176
    <ol class="breadcrumb">
      <li><a href="#"><i class="fa fa- 177
dashboard"></i> <?php echo $pageTitle; ?></a></li> 178
      <li class="active"><?php echo 179
$pageHeader; ?></li> 180
    </ol> 181
  </section> 182
  <?php if( iset( $message ) ) : ?> 183
  <div class="col-xs-offset-0 col-xs-12"> 184
  <div class="alert alert-success alert- 185
dismissible"> 186
    <button type="button" class="close" data- 187
dismiss="alert" aria-hidden="true"> </ 188
button> 189
    <h4><i class="icon fa fa-check"></i> <?ph190
      echo $message; ?></h4> 191
  </div> 192
</div> 193
<?php endif; ?> 194
  <section class="content"> 195
    <div class="row"> 196
      <div class="col-xs-12">
        <div class="box">
          <div class="box-header">
            <h3 class="box-title">Project 197
Information</h3>
          </div> 198
          <div class="box-body">
            <table id="example1" class="table 199
table-bordered table-hover">
              <thead>
                <tr>
                  <th>Name</th> 200
                  <th>Description </th>
                  <th>Start Date</th>
                  <th>End Date</th>
                </tr>
              </thead>
              <tbody>
                <tr>
                  <td><?=$project->name?></td> 201
                  <td><?=$project-> 202
description?></i></td>
                  <td><?=$project->start_date?> 203
                  <td><?=$project->end_date?> 204
                </td>
              </tr>
            </tbody>
          </table> 205
        </div>
      </div>
    </div>
  </section>
<?php if( iset( $message ) ) : ?>
<div class="col-xs-12">
  <div class="box">
    <div class="box-header">
      <h3 class="box-title">Project Head and Researchers Information</h3>
    <div class="box-body">
      <table id="example1" class="table-bordered table-hover">
        <thead>
          <tr>
            <th>Project Head</th>
            <th>Researchers</th>
          </tr>
        </thead>
        <tbody>
          <tr>
            <?php foreach($projectHead as $row):?>
              <td><?=$row->firstname?> <?=$row->lastname?></td>
            <?php endforeach;?>
            <td>
              <?php foreach($researchers as $row):?>
                <?=$row->firstname?> <?=$row->lastname?>
              <br>
              <?php endforeach;?>
            </td>
          </tr>
        </tbody>
      </table>
    </div>
  </div>
</div>
<div class="main-footer">
  <div class="pull-right hidden-xs">
    <strong>Copyright &copy; 2015 <a href="#">IMBB</a></strong> All rights reserved.
  </div>
  " width="35px"
  " width="35px"
  " width="35px"
</div>
<script src="<?php echo base_url("public.html/vendor/plugins/jQuery/jquery-2.1.4.min.js"); ?>"></script>
<script src="<?php echo base_url("public.html/vendor/bootstrap/js/bootstrap.min.js"); ?>" type="text/javascript"></script>
<script src="<?php echo base_url("public.html/vendor/adminlte/js/app.min.js"); ?>" type="text/javascript"></script>
<script src="<?php echo base_url("public.html/vendor/plugins/datatables/jquery.dataTables.min.js"); ?>" type="text/javascript"></script>
<script src="<?php echo base_url("public.html/vendor/plugins/datatables/dataTables.bootstrap.min.js"); ?>" type="text/javascript"></script>
<link href="https://code.ionicframework.com/ionicons/2.0.1/css/ionicons.min.css" rel="stylesheet" type="text/css" />
<link href="<?php echo base_url("public.html/vendor/plugins/datatables/dataTables.bootstrap.css"); ?>" rel="stylesheet" type="text/css" />
<link href="<?php echo base_url("public.html/vendor/adminlte/css/AdminLTE.min.css"); ?>" rel="stylesheet" type="text/css" />
<link href="<?php echo base_url("public.html/vendor/plugins/iCheck/square/blue.css"); ?>" rel="stylesheet" type="text/css" />

```

Listing 34: Specimen/access.php

```

1 <!DOCTYPE html>
2 <html>
3   <head>
4     <meta charset="UTF-8">
5     <title>IMBB BSSMS | Dashboard</title>
6     <meta content='width=device-width, initial- 9
scale=1, maximum-scale=1, user-scalable= 10
no' name='viewport'>
7     <link href="<?php echo base_url("public.html 11
/vendor/bootstrap/css/bootstrap.css"); ?>"> 12
  <link href="https://maxcdn.bootstrapcdn.com/ 13
font-awesome/4.3.0/css/font-awesome.min. 14
css" rel="stylesheet" type="text/css" />
<link href="https://maxcdn.bootstrapcdn.com/ 15
font-awesome/4.3.0/css/font-awesome.min. 16
css" rel="stylesheet" type="text/css" />
<link href="https://code.ionicframework.com/ 17
ionicons/2.0.1/css/ionicons.min.css" rel=" 18
stylesheet" type="text/css" />
<link href="<?php echo base_url("public.html 19
/vendor/plugins/datatables/dataTables. 20
bootstrap.min.js"); ?>" rel="stylesheet" 21
type="text/css" />
<link href="<?php echo base_url("public.html 22
/vendor/adminlte/css/AdminLTE.min.css"); 23
?>" rel="stylesheet" type="text/css" />
<link href="<?php echo base_url("public.html 24
/vendor/plugins/iCheck/square/blue.css"); 25
?>" rel="stylesheet" type="text/css" />

```

```

13   <link href=?<?php echo base_url("public_html/74
14     /vendor/adminlte/css/skins/skin-blue.css"?75
15   ); ?>" rel="stylesheet" type="text/css" 76
16   />
17   <link href=?<?php echo base_url("public_html/
18     /assets/css/system.css"); ?>" rel=" 77
19     stylesheets" type="text/css" /> 78
20   <!--[if lt IE 9]>
21   <script src="https://oss.maxcdn.com/
22     html5shiv/3.7.2/html5shiv.min.js"></
23     script> 79
24   <script src="https://oss.maxcdn.com/respond/1.4.2/respond.min.js"></script>
25   <![endif]-->
26   </head> 81
27 <body class="skin-blue sidebar-mini">
28 <div class="wrapper">
29 <header class="main-header">
30   <a href=?<= base_url('dashboard'); ?>" class
31     ="logo">
32     <span class="logo-mini"><b>BSS</b>MS</span>82
33   <span class="logo-lg"><b>IMBB BSSMS</b></span>83
34   </a>
35   <nav class="navbar navbar-static-top" role=" 84
36     navigation">
37     <a href="#" class="sidebar-toggle" data-
38       toggle="offcanvas" role="button">
39       <span class="sr-only">Toggle navigation
40       </span>
41     </a>
42     <div class="navbar-custom-menu">
43       <ul class="nav navbar-nav">
44         <li class="dropdown user user-menu"> 88
45           <a href="#" class="dropdown-toggle"
46             data-toggle="dropdown">
47             <img src=?<= base_url(
48               "public_html/vendor/adminlte/img/avatar.
49               png"); ?>" class="user-image" alt="User
50               Image"/> 90
51             <span class="hidden-xs"><?= $this
52               ->session->userdata('logged_in')['
53                 firstname']; ?></span>
54             <ul class="dropdown-menu">
55               <li class="user-header"> 94
56                 <img src=?<= base_url(
57                   "public_html/vendor/adminlte/img/avatar.
58                   png"); ?>" class="img-circle" alt="User
59                   Image" /> 95
60               <p>
61                 <?= $this->session->userdata('
62                   logged_in')['fullname']; ?>
63                 <small style="color:#00c0ef;">
64                   <?= $this->session->userdata('logged_in',
65                     ['usertype']); ?></small>
66               </p>
67               <li class="user-footer">
68                 <div class="pull-left">
69                   <a href=?<= base_url(
70                     'dashboard'); ?>" class="btn btn-default
71                     btn-flat">Dashboard</a>
72                 </div>
73                 <div class="pull-right">
74                   <a href=?<= base_url(
75                     'authenticate/logout'); ?>" class="btn
76                     btn-flat">Sign out</a>
77                 </div>
78               </li>
79             </ul>
80           <li>
81             <a href="#" data-toggle="control-
82               sidebar"><i class="fa fa-gears"></i></a>111
83           </li>
84         </ul>
85       </div>
86     </nav>
87   </header>
88   <aside class="main-sidebar">
89     <section class="sidebar">
90       <div class="user-panel">
91         <div class="pull-left image">
92           <img src=?<= base_url("public_html/
93             vendor/adminlte/img/avatar.png"); ?>">
94             class="img-circle" alt="User Image" /> 120
95         </div>
96         <div class="pull-left info">
97           <p><?= $this->session->userdata('
98             logged_in')['fullname']; ?></p>
99           <span class="glyphicon glyphicon-user" style="margin-left:5%;>
100             color:#00c0ef;"><?= $this->session->
101             userdata('logged_in')['usertype']; ?></span>
102         </div>
103       </div>
104     </section>
105   </aside>
106 </div>
107 <div class="content-wrapper">
108   <section class="content-header">
109     <h1>
110       <?php echo $pageHeader; ?>
111       <small></small>
112     </h1>
113     <ol class="breadcrumb">
114       <li><a href="#"><i class="fa fa-
115         dashboard"></i> <?php echo $pageTitle;
116       ></a></li>
117       <li class="active"><?php echo
118         $pageHeader; ?></li>
119     </ol>
120   </section>
121   <?php if( isset( $message ) ) : ?>
122   <div class="">
123     <div class="col-xs-offset-0 col-xs-12">
124       <div class="alert alert-<?php echo $message
125         ['type']; ?> alert-dismissible">
126         <button type="button" class="close" data-
127           dismiss="alert" aria-hidden="true"> </
128           button>
129         <h4><i class="icon fa fa-<?php echo
130           $message['icon']; ?>"></i> <?php echo
131           $message['text']; ?></h4>
132       </div>
133     </div>
134   </div>
135 </div>

```

```

126 <?php endif; ?>
127 <section class="content">
128
129     <div class="row">
130         <div class="col-md-12">
131             <div class="box box-primary">
132                 <div class="box-header">
133                     <h3 class="box-title"></h3>
134                 </div><!-- /.box-header -->
135                 <?php echo form_open('specimen/
logAccess'); ?>
136                 <div class="box-body">
137                     <div class="col-sm-4 invoice-col">
138                         <div class="form-group">
139                             <label for="amount">Amount<i 178
class="glyphicon glyphicon-asterisk" 179
style="color: red;"></i></label>(in 180
microliters/milligrams) 181
                             <input type="number" class=" 182
form-control" id="amount" name="amount" 183
required="required" min="1" max="1000"> 184
140                         </div>
141                     </div>
142                     <div class="col-sm-4 invoice-col" 187
                         <div class="form-group"> 188
                             <label>Test<i class="glyphicon 189
glyphicon-asterisk" style="color: red;"></i></label>
143                         <select class="form-control" 190
name="test" required="required">
144                             <option></option> 191
                             <?php foreach($tests as $row
145 ) :?>
146                             <option value=<?= $row->id?> 192
?>"><?=$row->name?></option>
147                         <?php endforeach;?>
148                         </select> 193
149                     </div>
150                     <div class="col-sm-4 invoice-col" 196
                         <div class="form-group"> 197
                             <label for="barcode">Sample
Barcode<i class="glyphicon glyphicon-
asterisk" style="color: red;"></i></label> 198
                             <input type="text" class="form
-control" id="barcode" name="barcode"
placeholder="Scan/Enter Barcode" required 199
="required">
151                         </div>
152                     </div>
153                     <center>
154                         <button type="button" class="btn
btn-primary" data-toggle="modal" data-
target="#sampleModal" id="access">Submit
155 </button>
156                         <button type="reset" class="btn
btn-default">Clear</button>
157                     </center>
158                 </div>
159             </div>
160         </div>
161     <div class="modal fade" id="sampleModal" 205
tabindex="-1" role="dialog" aria-
labelledby="myModalLabel" aria-hidden=" 206
true">
162         <div class="modal-dialog">
163             <div class="modal-content">
164                 <div class="modal-header">
165
166                 <div class="modal-fade" id="sampleModal" 205
tabindex="-1" role="dialog" aria-
labelledby="myModalLabel" aria-hidden=" 206
true">
167                     <div class="modal-dialog">
168                         <div class="modal-content">
169                             <div class="modal-header">
170
171

```

Listing 35: Specimen/create.php

```
29 <a href="#" class="sidebar-toggle" data- 86
30   toggle="offcanvas" role="button"> 87
31   <span class="sr-only">Toggle navigation</span>
32 </a>
33 <div class="navbar-custom-menu">
34   <ul class="nav navbar-nav">
35     <li class="dropdown user user-menu"> 88
36       <a href="#" class="dropdown-toggle" data-toggle="dropdown">
37         <img src=<?= base_url('public_html/vendor/adminlte/img/avatar.png'); ?>" class="user-image" alt="User Image"/> 89
38       <span class="hidden-xs"><?= $this->session->userdata('logged_in')[['firstname']]; ?></span> 90
39       <ul class="dropdown-menu"> 93
40         <li class="user-header"> 94
41           <img src=<?= base_url('public_html/vendor/adminlte/img/avatar.png'); ?>" class="img-circle" alt="User Image" /> 91
42           <p> 92
43             <?= $this->session->userdata('logged_in')[['fullname']]; ?> 93
44             <small style="color:#00c0ef;"> 94
45             <?= $this->session->userdata('logged_in')[['usertype']]; ?></small> 96
46           </p> 97
47         </li> 98
48         <li class="user-footer">
49           <div class="pull-left">
50             <a href=<?= base_url('dashboard'); ?>" class="btn btn-default btn-flat">Dashboard</a> 99
51           </div>
52           <div class="pull-right">
53             <a href=<?= base_url('authenticate/logout'); ?>" class="btn btn-default btn-flat">Sign out</a> 100
54           </div>
55         </li> 101
56       </ul> 102
57     <li> 103
58       <a href="#" data-toggle="control-sidebar"><i class="fa fa-gears"></i></a> 104
59     </li> 105
60   </ul> 106
61 </div> 107
62 </nav> 108
63 </header> 109
64 <aside class="main-sidebar"> 110
65   <section class="sidebar"> 111
66     <div class="user-panel"> 112
67       <div class="pull-left image"> 113
68         <img src=<?= base_url('public_html/vendor/adminlte/img/avatar.png'); ?>" class="img-circle" alt="User Image" /> 114
69       </div> 115
70       <div class="pull-left info"> 116
71         <p><?= $this->session->userdata('logged_in')[['fullname']]; ?></p> 117
72         <span class="glyphicon glyphicon-user" style="margin-left:5%; color:#00c0ef;"><?= $this->session->userdata('logged_in')[['usertype']]; ?></span> 118
73       </div> 119
74     </div> 120
75   <ul class="sidebar-menu"> 121
76     <li class="header"><?= $this->session->userdata('logged_in')[['projectName']]; ?></li> 122
77     <li> 123
78       <a href="#"><i class="glyphicon glyphicon-tasks"></i> <span>Project</span> 124
79       <li class="fa fa-angle-left pull-right"></li> 125
80     </ul> 126
81     <ul class="treeview-menu"> 127
82       <li><a href=<?= base_url('singleproject/index'); ?>"><i class="glyphicon glyphicon-chevron-right"></i> About</a></li> 128
83       <li style="display:<?=(($this->session->userdata('logged_in')[['usertype']] == 1 ? 'none' : '')?>"><a href=<?= base_url('singleproject/edit'); ?>"><i class="glyphicon glyphicon-chevron-right"></i> Update</a></li> 129
84       </ul> 130
85       <li class="active"> 131
86         <a href="#"><i class="glyphicon glyphicon-tasks"></i> <span>Specimen</span> 132
87         <li class="fa fa-angle-left pull-right"></li> 133
88       </li> 134
89     </ul> 135
90   </div> 136
91 </div> 137
92 </div> 138
93 <ul class="treeview-menu"> 139
94   <li><a href=<?= base_url('specimen/index'); ?>"><i class="glyphicon glyphicon-chevron-right"></i> New Sample</a></li> 140
95   <li><a href=<?= base_url('specimen/create'); ?>"><i class="glyphicon glyphicon-chevron-right"></i> Sample List</a></li> 141
96   </ul> 142
97 </li> 143
98 </ul> 144
99 </li> 145
100 </ul> 146
101 </li> 147
102 </ul> 148
103 </div> 149
104 <div class="content-wrapper"> 150
105   <section class="content-header"> 151
106     <h1> 152
107       <?php echo $pageHeader; ?> 153
108       <small></small> 154
109     </h1> 155
110     <ol class="breadcrumb"> 156
111       <li><a href="#"><i class="fa fa-dashboard"></i> <?php echo $pageTitle; ?></a></li> 157
112       <li class="active"><?php echo $pageHeader; ?></li> 158
113     </ol> 159
114   </section> 160
115   <?php if( isset( $message ) ) : ?> 161
116   <div class="col-xs-offset-0 col-xs-12"> 162
117     <div class="alert alert-<?=(($message['type'])?>" alert-dismissible"> 163
118       <button type="button" class="close" data-dismiss="alert" aria-hidden="true"> </button> 164
119     <h4><i class="icon fa fa-<?=(($message['icon'])?>"></i> <?php echo $message['text']; ?></h4> 165
120   </div> 166
121   </div> 167
122   <?php endif; ?> 168
123   <section class="content"> 169
124     <div class="row"> 170
125       <div class="col-md-4"> 171
126         <div class="box box-primary"> 172
127           <div class="box-header"> 173
128             <h3 class="box-title">Specimen Sample Information</h3> 174
129           </div> 175
130           <?php echo form_open('specimen/insert'); ?> 176
131           <div class="box-body"> 177
132             <div class="form-group"> 178
133               <label>Project: </label><?=$this->session->userdata('logged_in')[['projectName']]; ?> 179
134               </div> 180
135             <div class="form-group"> 181
136               <label>Other Projects</label> 182
137               <select multiple class="form-control" name="projectNames[]"> 183
138                 <?php foreach($projects as $row):?> 184
139                   <option value=<?=$row->id?>></option> 185
140                 </?php endforeach;?> 141
141             </div> 142
142           </div> 143
143           <div class="help-block">For shared specimen sample.</p> 144
144         </div> 145
145       </div> 146
146     </div> 147
147   </div> 148
148 </div> 149
149 <div class="form-group"> 150
150   <div class="help-block"> 151
151   </div> 152
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825 </
```

```

146      <label for="barcode">Barcode<i 212
147      class="glyphicon glyphicon-asterisk" 213
148      style="color:red"></i></label> 214
149      <input type="text" class="form- 215
150      control" id="barcode" name="barcode" 215
151      placeholder="Barcode" required="required" 216
152      > 216
153      <p class="help-block">You may 216
154      scan or enter barcode here.</p> 217
155      </div> 218
156      <div class="form-group"> 219
157      <label>Specimen Type<i class=" 220
158      glyphicon glyphicon-asterisk" style=" 221
159      color:red"></i></label> 222
160      <select class="form-control" 223
161      name="type" required="required"> 224
162      <option></option> 225
163      <?php foreach($specimenTypes 225
164      as $row):?> 226
165      <option value="?>?=$row->id?>" 227
166      <?php endforeach;?> 228
167      </select> 229
168      </div> 230
169      <div class="form-group"> 231
170      <label for="collectionDate"> 232
171      Collection Date</label> 233
172      <input type="date" class="form- 233
173      control" id="collectionDate" name=" 234
174      collectionDate"> 235
175      </div> 236
176      <div class="form-group"> 237
177      <label for="origVolume">Volume<i 238
178      class="glyphicon glyphicon-asterisk" 239
179      style="color:red"></i></label> 240
180      <input type="number" class="form- 241
181      control" id="originalVolume" name=" 242
182      originalVolume" min="0" max="1000" 243
183      required="required"> 244
184      <p class="help-block">(in 245
185      microliters or milligrams)</p> 246
186      </div> 247
187      </div> 248
188      </div> 249
189      <div class="col-md-4"> 250
190      <div class="box box-warning"> 251
191      <div class="box-header"> 252
192      <h3 class="box-title">Source 253
193      Information</h3> 254
194      </div> 255
195      <div class="box-body"> 256
196      <div class="form-group"> 257
197      <label> 258
198      <input type="checkbox" 258
199      name="masked" id="masked" /> 259
200      Masked 259
201      </label> 260
202      </div> 260
203      <div class="form-group"> 261
204      <label>First Name</label> 261
205      <input type="text" class="form- 262
206      control" id="fName" name="fName" 262
207      placeholder="Enter First Name"/> 262
208      </div> 263
209      <div class="form-group"> 263
210      <label>Last Name</label> 264
211      <input type="text" class="form- 264
212      control" id="lName" name="lName" 264
213      placeholder="Enter Last Name"/> 265
214      </div> 266
215      <div class="form-group"> 267
216      <label>Sex</label> 268
217      <div class="radio" name="sourceSex" 269
218      > 270
219      <label> 271
220      <input type="radio" id="femaleRadio" 271
221      name="sex" value="female" /> 272
222      Female 273
223      </label> 274
224      </div> 275
225      <div class="radio"> 275
226      <label> 276
227      <input type="radio" id="maleRadio" 276
228      name="sex" value="male"/> 276
229      Male 277
230      </label> 278
231      </div> 279
232      <div class="form-group"> 279
233      <label>Date of Birth</ 280
234      label> 280
235      <input type="date" class=" 281
236      form-control" name="birthdate" id=" 281
237      birthdate"/> 281

```

```

282             <div class="modal-footer"> 307 <script src=<?php echo base_url("public_html/
283                 <button type="submit" class="btn 308 vendor/plugins/datatables/dataTables.
284                     btn-primary" id="addSampleSubmit">Submit bootstrap.min.js"); ?>" type="text/
285                 </button> 310 javascript"></script>
286             </div> 311
287         </form> 312
288     </div> 313
289 </div> 314
290 </section> 315
291 </div> 316
292 <footer class="main-footer"> 317
293     <div class="pull-right hidden-xs"> 318
294         <strong>Copyright &copy; 2015 <a href="#"> 319
295             IMBB</a></strong> All rights reserved. 320
296     </div> 321
297     <img src=<?php echo base_url("public_html/319
298         vendor/img/IMBB.png"); ?>" width="35px" 320
299             ></img> 321
300     <img src=<?php echo base_url("public_html/321
301         vendor/img/UPM_Logo.png"); ?>" width="35 322
302             px"></img> 323
303     <img src=<?php echo base_url("public_html/323
304         vendor/img/NIH_Logo.png"); ?>" width="35 323
305             px"></img> 324
306 </script src=<?php echo base_url("public_html/324
307         vendor/plugins/datatables/jquery. 325
308             dataTables.min.js"); ?>" type="text/ 326
309             javascript"></script> 327
310 <script src=<?php echo base_url("public_html/327
311         vendor/plugins/jQuery/jQuery - 2.1.4.min.j 328
312             s"); ?>"></script> 329
313 <script src=<?php echo base_url("public_html/329
314         vendor/bootstrap/js/bootstrap.min.js"); 330
315             ?>" type="text/javascript"></script> 331
316 <script src=<?php echo base_url("public_html/331
317         vendor/adminlte/js/app.min.js"); ?>" typ 332
318             = "text/javascript"></script> 333
319 <script src=<?php echo base_url("public_html/333
320         vendor/plugins/datatables/jquery. 334
321             dataTables.min.js"); ?>" type="text/ 335
322             javascript"></script> 336
323 </body> 337 </html>

```

Listing 36: Specimen/edit.php

```

1 <!DOCTYPE html> 27 <span>
2 <html> 28 </a>
3 <head> 29 <nav class="navbar navbar-static-top" role="navigation">
4     <meta charset="UTF-8"> 30 <a href="#" class="sidebar-toggle" data-
5     <title>IMBB BSSMS | Dashboard</title> 31 toggle="offcanvas" role="button">
6     <meta content='width=device-width, initial- 32     <span class="sr-only">Toggle navigation
7         scale=1, maximum-scale=1, user-scalable= 33 </span>
8             no' name='viewport'> 34 </a>
9     <link href=<?php echo base_url("public_html/34
10        /vendor/bootstrap/css/bootstrap.css"); ?> 35 <div class="navbar-custom-menu">
11         " rel="stylesheet" type="text/css" /> 36 <ul class="nav navbar-nav">
12     <link href="https://maxcdn.bootstrapcdn.com/ 37 <li class="dropdown user user-menu">
13         font-awesome/4.3.0/css/font-awesome.min. 38 <a href="#" class="dropdown-toggle" data-
14             css" rel="stylesheet" type="text/css" /> 39 toggle="dropdown">
15     <link href="https://code.ionicframework.com/ 40     <img src=<?= base_url("39
16         ionicons/2.0.1/css/ionicons.min.css" rel= 41         public_html/vendor/adminlte/img/avatar.
17             "stylesheet" type="text/css" /> 42         png"); ?>" class="user-image" alt="User
18     <link href=<?php echo base_url("public_html/43         Image"/>
19         /vendor/plugins/datatables/dataTables. 44         <span class="hidden-xs"><?= $this
20             bootstrap.css"); ?>" rel="stylesheet" 45         ->session->userdata('logged_in')[ '45
21             type="text/css" /> 46         firstname']; ?></span>
22     <link href=<?php echo base_url("public_html/46
23         /vendor/adminlte/css/AdminLTE.min.css"); 47         </a>
24             ?>" rel="stylesheet" type="text/css" /> 48         <ul class="dropdown-menu">
25     <link href=<?php echo base_url("public_html/49
26         /vendor/plugins/iCheck/square/blue.css"); 50         <li class="user-header">
27             ?>" rel="stylesheet" type="text/css" /> 51             <img src=<?= base_url("49
28     <link href="https://oss.maxcdn.com/ 52         public_html/vendor/adminlte/img/avatar.
29         html5shiv/3.7.2/html5shiv.min.js"></ 53         png"); ?>" class="img-circle" alt="User
30             script> 54         Image" />
31     <script src="https://oss.maxcdn.com/respond/ 55         <p>
32         /1.4.2/respond.min.js"></script> 56             <?= $this->session->userdata('
33     <![endif]--> 57             logged_in')[ 'full_name']; ?>
34 </head> 58             <small style="color:#00c0ef;">
35 <body class="skin-blue sidebar-mini"> 59             <?= $this->session->userdata('logged_in',
36     <div class="wrapper"> 60             'logged_in'][ 'user_type']; ?></small>
37         <header class="main-header"> 61             </p>
38             <a href=<?= base_url('dashboard'); ?>" 62             </li>
39                 class="logo"> 63             <li class="user-footer">
40                 <span class="logo-mini"><b>BSS</b>MS</span> 64             <div class="pull-left">
41             > 65                 <a href=<?= base_url('
42             <span class="logo-lg"><b>IMBB BSSMS</b></ 66                     authenticate/logout'); ?>" class="btn btn-
43             > 67                     default btn-flat">Sign out</a>
44 </div> 68             </div>
45 </body> 69             <a href=<?= base_url('
46 </html> 70                     authenticate/logout'); ?>" class="btn btn-
47 <![endif]--> 71                     default btn-flat">Dashboard</a>
48 <![endif]--> 72             </div>
49 <![endif]--> 73             <div class="pull-right">
50 <![endif]--> 74                 <a href=<?= base_url('
51 <![endif]--> 75                     authenticate/logout'); ?>" class="btn btn-
52 <![endif]--> 76                     default btn-flat">Sign out</a>
53 <![endif]--> 77             </div>
54 <![endif]--> 78             </li>
55 <![endif]--> 79             </ul>
56 <![endif]--> 80             </li>
57 <![endif]--> 81             <a href="#" data-toggle="control-

```

```

59     sidebar">><i class="fa fa-gears"></i></a>111
60     </li>
61   </ul>
62 </div>
63 </header>
64 <aside class="main-sidebar">114
65   <section class="sidebar">115
66     <div class="user-panel">116
67       <div class="pull-left image">117
68         "118
70         class="img-circle" alt="User Image" />119
71       </div>
72       <div class="pull-left info">120
73         <p><?= $this->session->userdata(121
74           logged_in)['fullname']; ?></p>
75         <span class="glyphicon glyphicon-user"122
76           ></span><span style="margin-left:5%;123
77           color:#00c0ef;"><?= $this->session->124
78           userdata('logged_in')['usertype']; ?></125
79           span>
80         </div>
81       <ul class="sidebar-menu">126
82         <li class="header"><?= $this->session127
83           ->userdata('logged_in')['projectName'];128
84         ></li>
85         <li><a href="#"><i class='glyphicon131
86           glyphicon-tasks'></i> <span>Project</span>
87         ><i class="fa fa-angle-left pull-right"132
88         ></i></a>
89         <ul class="treeview-menu">133
90           <li><a href="?=& base_url('135
91             singleproject/index'); ?>"><i class='136
92               glyphicon glyphicon-chevron-right'></i>137
93             About</a></li>
94             <li style="display:<?=(($this->138
95               session->userdata('logged_in')[139
96                 usertypeId] == 1 ? 'none' : '')?>"><a href="?=&140
97               base_url('singleproject/edit'); ?>"><i class='glyphicon glyphicon-141
98               chevron-right'></i>Update</a></li>
99             </ul>
100            <li class="active">
101              <a href="#"><i class='glyphicon142
102                glyphicon-tasks'></i> <span>Specimen</span>
103              <i class="fa fa-angle-left pull-right"144
104                ></i></a>
105              <ul class="treeview-menu">145
106                <li style="display:<?=(($this->146
107                  session->userdata('logged_in')[148
108                    usertypeId] == 1 ? 'none' : '')?>"><a href="?=&149
109                      base_url('specimen/create'); ?>"><i class='glyphicon glyphicon-150
110                      chevron-right'></i>New Sample</a></li>
111                      <li class="active"><a href="?=&151
112                        base_url('specimen/index'); ?>"><i class='152
113                        glyphicon glyphicon-chevron-right'></i>153
114                        Sample List</a></li>
115                      </ul>
116                    </li>
117                    <li>
118                      <a href="#"><i class='glyphicon154
119                        glyphicon-tasks'></i> <span>Access</span>
120                      <i class="fa fa-angle-left pull-right"155
121                        ></i></a>
122                      <ul class="treeview-menu">156
123                        <li><a href="?=& base_url('157
124                          specimen/access'); ?>"><i class='158
125                            glyphicon glyphicon-chevron-right'></i>Sample
126                            Access</a></li>
127                            <li style="display:<?=(($this->159
128                              session->userdata('logged_in')[160
129                                usertypeId] == 1 ? 'none' : '')?>"><a href="?=&161
130                                  base_url('specimen/logs'); ?>"><i class='162
131                                  glyphicon glyphicon-chevron-right'></i>163
132                                  Sample Access Logs</a></li>
133                                </ul>
134                                </li>
135                                <li style="display:<?=(($this->164
136                                  session->userdata('logged_in')[165
137                                    usertypeId] == 1 ? 'none' : '')?>"><a href="?=&166
138                                      base_url('reports'); ?>"><i class='167
139                                      glyphicon glyphicon-tasks'></i>Reports</a>
140                                    </li>
141                                  </ul>
142                                </li>
143                                <section>162
144                                  <div class="content-wrapper">164
145                                    <section class="content-header">165
146                                      <h1>166
147                                        <?php echo $pageHeader; ?>
148                                        <small></small>
149                                      </h1>
150                                    </section>
151                                  <ol class="breadcrumb">
152                                    <li><a href="#"><i class="fa fa-153
153          dashboard"></i> <?php echo $pageTitle;154
154          ?></a></li>
155          <li class="active"><?php echo156
156          $pageHeader; ?></li>
157        </ol>
158      </section>
159    <div class="content-wrapp160
160      <section class="content-header">161
161        <h1>162
162          <?php echo $pageHeader; ?>
163          <small></small>
164        </h1>
165      </section>
166      <?php if( iset( $message ) ) : ?>
167      <div class="col-xs-offset-0 col-xs-12">
168        <div class="alert alert-success alert-169
169         -dismissible">
170          <button type="button" class="close" data-170
170            dismiss="alert" aria-hidden="true"> </171
171          button>
172          <h4><i class="icon fa fa-check"></i> <?php173
173          echo $message; ?></h4>
174        </div>
175      </div>
176      <?php endif; ?>
177      <?php echo form_open('specimen/update/178
178          $part.' . $sampleId); ?>
179      <section class="content">
180        <div class="row">
181          <div class="col-xs-12">
182            <div class="box">
183              <div class="box-header with-184
184              border">
185                <h3 class="box-title">
186                  Biospecimen Sample Information</h3>
187                </div>
188                <div class="box-body">
189                  <table id="example1" class="190
190          table-bordered">
191                    <thead>
192                      <tr>
193                        <th>Project</th>
194                        <th>Sample Barcode</th>
195                      <th>Collection Date</th>
196                      <th>Original Volume</th>
197                      <th>Current Volume</th>
198                      <th>Specimen Type</th>
199                    </thead>
200                    <tbody>
201                      <tr>
202                        <?php if (
203                          $sharedProjects != null ):?>
204                          <td><?php foreach(
205                            $sharedProjects as $row):?> <?= $row->
206                            pname?> <br/> <?php endforeach;?></td>
207                            <?php else:?>
208                            <td></td>
209                            <?php endif;?>
210                            <?php if ($part == 1) :
211
212                            <td><input type="text"
213                              class="form-control" id="barcode" name="214
214          barcode" placeholder="Barcode" value="<?=215
215          $sampleInfo->barcode?>"></td>
216                            <td><input type="date"
217                              class="form-control" id="collectionDate"
218                              name="collectionDate" value="<?=219
219          $sampleInfo->collection_date?>"></td>
220                            <td><input type="number"
221                              class="form-control" id="222
222          originalVolume" name="originalVolume" min="0" value="<?=223
223          $sampleInfo->original_volume?>"></td>
224                            <td><input type="number"
225                              class="form-control" id="226
226          currentVolume" name="currentVolume" min="0" value="<?=227
227          $sampleInfo->current_volume?>"></td>
228                            <td>
229                              <select class="230
230          form-control" name="specimetype">
231                                <option></option>
232
233                                <?php foreach(
234                                  $specimenTypes as $row):?>
235                                  <option value="<?=236
236          $row->id?>" <?=(($sampleInfo->sname ==237
237          $row->name ? 'selected' : '')?> ><?=238
238          $row->name?></option>
239
240                                <?php endforeach
241                                ;?>
242
243                                </select>
244                            </td>
245                            <?php else : ?>
246                            <td><?=$sampleInfo->
247                                barcode?></td>
248                            <td><?=$sampleInfo->
249                                collection_date?></td>

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168     <td><?=$sampleInfo-> 232
169     original_volume?></td> 233
170     <td><?=$sampleInfo-> 234
171     current_volume?></td> 235
172     <td><?=$sampleInfo-> 236
173     sname ?></td> 237
174     <?php endif;?> 238
175     </tr> 239
176     </tbody> 240
177     </table> 241
178     </div> 242
179     <button type="button" 243
180     class="btn btn-primary" data-toggle=" 244
181     modal" data-target="#updateModal">Update 245
182     </button> 246
183     </div> 247
184     <?php endif;?> 248
185     </div> 249
186     </div> 250
187     <div class="row"> 251
188     <div class="col-xs-12"> 252
189     <div class="box"> 253
190     <div class="box-header with- 254
191     border"> 255
192     <h3 class="box-title">Sourc 256
193     Information</h3> 257
194     </div><!-- /.box-header --> 258
195     <div class="box-body"> 259
196     <table class="table table- 260
197     bordered"> 261
198     <thead> 262
199     <tr> 263
200     <th>First Name</th> 264
201     <th>Last Name</th> 265
202     <th>Sex</th> 266
203     <th>Date of Birth</th> 267
204     <th>Hospital Name</th> 268
205     </thead> 269
206     <tbody> 270
207     <?php foreach( $sourceInf 271
208     as $row):?> 272
209     <tr> 273
210     <td><input type="text" 274
211     class="form-control" name="firstname" 275
212     value=<?=$row->firstname?>>/</td> 276
213     <td><input type="text" 277
214     class="form-control" name="lastname" 278
215     value=<?=$row->lastname?>>/</td> 279
216     <td> 280
217     <div class="radio" 281
218     name="sourceSex"> 282
219     <label> 283
220     <input type="radio" 284
221     id="femaleRadio" name="sex" value=" 285
222     "female" <?=(($row->sex == 'female' ? 286
223     checked' : '')?>/> 287
224     <label> 288
225     <input type="radio" 289
226     id="maleRadio" name="sex" value=" 290
227     "male" <?=(($row->sex == 'male' ? 291
228     checked' : '')?>/> 292
229     <label> 293
230     <input type="date" 294
231     class="form-control" name="birthdate" 295
232     id="birthdate" value=<?=$row->birthdate?>>/></td> 296
233     <td><input type="text" 297
234     class="form-control" name="hospitalName" 298
235     value=<?=$row->hospitalName?>>/></td> 299
236     <?php else : ?> 300
237     <td><?=$row->firstnam 301
238     <td><?=$row->lastnam 302
239     <td><?=$row->sex?></td> 303
240     <td><?=$row->birthdate 304
241     <td><?=$row->hospital_name?></td> 305
242     <?php endif;?> 306
243     </tr> 307
244     <?php endforeach;?> 308
245     </tbody> 309
246     </table> 310
247     <?php if($part == 2) : ?> 311
248     <div class="box-footer" > 312
249     <div class="pull-right" 313
250     hidden-xs"> 314
251     <button type="button" 315
252     class="btn btn-primary" data-toggle=" 316
253     modal" data-target="#updateModal">Update 317
254     </button> 318
255     </div> 319
256     <?php endif;?> 320
257     </div> 321
258     <?php endif;?> 322
259     </div> 323
260     <div class="row" 324
261     <div class="col-xs-12" 325
262     <div class="box" 326
263     <div class="box-header with- 327
264     border"> 328
265     <h3 class="box-title">Test 329
266     Information</h3> 330
267     </div> 331
268     <div class="box-body" 332
269     <table class="table table- 333
270     bordered"> 334
271     <thead> 335
272     <tr> 336
273     <th>Test</th> 337
274     <th>Amount</th> 338
275     <th>Result</th> 339
276     <th>Notes</th> 340
277     </tr> 341
278     </thead> 342
279     <tbody> 343
280     <?php if( $testInfo != 344
281     null ) : ?> 345
282     <?php foreach( $testInfo 346
283     as $row):?> 347
284     <tr> 348
285     <td><?=$row->name?></td> 349
286     <td><?=$row->amount 350
287     <?php if($part == 3) 351
288     <td> 352
289     <select class="form- 353
290     control" name="result <?=$row->id?>"> 354
291     <option></option> 355
292     <option <?= ($row 356
293     ->result == null ? '' : ('$row->result == 357
294     0 ? 'selected' : '')?>>positive </ 358
295     option> 359
296     <option <?= ($row 360
297     ->result == null ? '' : ('$row->result == 361
298     0 ? 'selected' : '')?>>negative </ 362
299     option> 363
300     </select> 364
301     </td> 365
302     <td><input type="text" 366
303     class="form-control" name="notes <?=$row 367
304     ->id?>" value=<?=$row->notes?>>/></td> 368
305     <?php else:> 369
306     <td><?=$row->result 370
307     == null ? '' : ('$row->result == 0 ? 371
308     negative : 'positive')?></td> 372
309     <td><?=$row->notes?></td> 373
310     <?php endif;?> 374
311     </tr> 375
312     <?php endforeach;?> 376
313     <?php else : ?> 377
314     <tr> 378
315     <td>no available data 379
316     </td> 380
317     <td></td> 381
318     <td></td> 382
319     <td></td> 383
320     </tr> 384
321     <?php endif;?> 385
322     </tbody> 386
323     </table> 387
324     </div> 388
325     <?php if($part == 3) : ?> 389
326     <div class="box-footer" > 390
327     <div class="pull-right" 391
328     hidden-xs"> 392
329     <button type="button" 393
330     class="btn btn-primary" data-toggle=" 394
331     modal" data-target="#updateModal">Update 395
332     </button> 396
333     </div> 397

```

```

302           <?php endif;?>          358
303           </div>                  359
304       </div>                  360
305   </div>                  361
306   <div class="row">          362
307     <div class="col-xs-12">
308       <div class="box">
309         <div class="box-header with-
310 border">
311           <h3 class="box-title">
312             Location Information </h3>    364
313           </div>
314           <div class="box-body">
315             <table class="table table-
316 bordered">
317               <thead>
318                 <tr>          366
319                   <th>Freezer</th>
320                   <th>Shelf</th>
321                   <th>Rack</th>
322                   <th>Rack Level</th>
323                   <th>Box</th>
324                   <th>Row</th>          368
325                   <th>Column</th>
326               </tr>
327             </thead>          369
328             <tbody>
329               <?php foreach(
330                 $locationInfo as $row):?>
331                 <tr style="display: <?=(
332                   $this->session->userdata('logged_in')[,
333                     'usertype'] != 'Project Head' ? : 'none',
334                   ?>">
335                   <td><?= $row->fname?><?>373
336                   td>          374
337                   <td><?= $row->snumber 375
338                   ?></td>          376
339                   <td><?= $row->rnumber 377
340                   ?></td>          378
341                   <td><?= $row->lnumber 379
342                   ?></td>          380
343                   <td><?= $row->bnumber 381
344                   ?></td>          382
345                   <td><?= $row->column 383
346                   ?></td>          384
347                   <?php endforeach;?>
348                   <?php foreach(
349                     $locationInfo as $row):?>
350                     <tr style="display: <?=(
351                       $this->session->userdata('logged_in')[,
352                         'usertype'] == 'Project Head' ? : 'none',
353                         ?>">
354                     <td><?= $row->fname?></
355                     td>          390
356                     <td><?= $row->snumber 391
357                     ?></td>          392
358                     <td><?= $row->rnumber 393
359                     ?></td>          394
360                     <td><input type="text"
361                       class="form-control" name="boxNumber" 395
362                       value=<?=$row->bnumber?>></td>
363                     <td>          396
364                     <select class="form-
365 control" name="row">          397
366                       <option></option>397
367                       <option <?= ($row398
368                         ->row == 'A' ? 'selected' : '')?>>A</
369                         option>          399
370                         <option <?= ($row
371                           ->row == 'B' ? 'selected' : '')?>>B</
372                           option>          400
373                           <option <?= ($row401
374                             ->row == 'C' ? 'selected' : '')?>>C</
375                             option>          402
376                             <option <?= ($row404
377                               ->row == 'D' ? 'selected' : '')?>>D</
378                               option>          403
379                               <option <?= ($row407
380                                 ->row == 'E' ? 'selected' : '')?>>E</
381                                 option>          404
382                                 <option <?= ($row
383                                   ->row == 'F' ? 'selected' : '')?>>F</
384                                   option>          405
385                                   <option <?= ($row
386                                     ->row == 'G' ? 'selected' : '')?>>G</
387                                     option>          406
388                                     <option <?= ($row
389                                       ->row == 'H' ? 'selected' : '')?>>H</
390                                       option>          407
391                                       <option <?= ($row
392                                         ->row == 'I' ? 'selected' : '')?>>I</
393                                         option>          408
394                                         </select>          409
395                                         </td>          410
396                                         </div>          411
397                                         </div>          412
398                                         </div>          413
399                                         </div>          414
400                                         </div>          415

```

```

416      420 <script src=<?php echo base_url("public_html/
417 <script src=<?php echo base_url("public_html/
418 <script src=<?php echo base_url("public_html/421 <script src=<?php echo base_url("public_html/
419 <script src=<?php echo base_url("public_html/
420 <script src=<?php echo base_url("public_html/
421 <script src=<?php echo base_url("public_html/
422 </body>
423 </html>

```

**Listing 37: Specimen/index.php**

```

1 <!DOCTYPE html> 47
2 <html> 48
3 <head> 49
4   <meta charset="UTF-8">
5   <title>IMBB BSSMS | Dashboard</title> 50
6   <meta content='width=device-width, initial-scale=1, maximum-scale=1, user-scalable=no' name='viewport'>
7   <link href=<?php echo base_url("public_html
8     /vendor/bootstrap/css/bootstrap.css"); ?> 53
9       rel="stylesheet" type="text/css" /> 54
10  <link href="https://maxcdn.bootstrapcdn.com/font-awesome/4.3.0/css/font-awesome.min.css" rel="stylesheet" type="text/css" /> 55
11  <link href="https://code.ionicframework.com/ionicicons/2.0.1/css/ionicons.min.css" rel="stylesheet" type="text/css" /> 56
12  <link href=<?php echo base_url("public_html
13    /vendor/plugins/datatables/dataTables.bootstrap.css"); ?> 59
14  <link href=<?php echo base_url("public_html
15    /assets/css/system.css"); ?> 60
16  <!--[if lt IE 9]> 61
17  <script src="https://oss.maxcdn.com/html5shiv/3.7.2/html5shiv.min.js"></script> 62
18  <!--[endif]--> 63
19 </head> 64
20
21 <body class="skin-blue sidebar-mini"> 65
22 <div class="wrapper"> 66
23 <header class="main-header"> 67
24   <a href=<?= base_url('dashboard'); ?> class="logo"> 68
25     <span class="logo-mini"><b>BSS</b>MS</span> 69
26     <span class="logo-lg"><b>IMBB BSSMS</b></span> 70
27   </a> 71
28   <nav class="navbar navbar-static-top" role="navigation"> 72
29     <a href="#" class="sidebar-toggle" data-toggle="offcanvas" role="button"> 73
30       <span class="sr-only">Toggle navigation</span> 74
31     </a> 75
32     <div class="navbar-custom-menu"> 76
33       <ul class="nav navbar-nav"> 77
34         <li class="dropdown user user-menu"> 78
35           <a href="#" class="dropdown-toggle" data-toggle="dropdown"> 79
36             <img src=<?= base_url("public_html/vendor/adminlte/img/avatar.png"); ?> 80
37             class="user-image" alt="User Image"/> 81
38             <span class="hidden-xs"><?= $this->session->userdata('logged_in')[ 'firstname']; ?></span> 82
39             </a> 83
40             <ul class="dropdown-menu"> 84
41               <li class="user-header"> 85
42                 <img src=<?= base_url("public_html/vendor/adminlte/img/avatar.png"); ?> 86
43                 class="img-circle" alt="User Image"/> 87
44                 <p> 88
45                   <?= $this->session->userdata('logged_in')[ 'fullname']; ?> 89
46                   <small style="color:#00c0ef;"> 90
47                     <?= $this->session->userdata('logged_in')[ 'usertype']; ?></small> 91
48                   </p> 92
49                 <small style="color:#00c0ef;"> 93
50               </li>
51             </ul>
52           </li>
53         </ul>
54       </li>
55     </ul>
56   </nav>
57
58   <li class="user-footer"> 59
59     <div class="pull-left"> 60
60       <a href=<?= base_url('dashboard'); ?> class="btn btn-default btn-flat">Dashboard</a> 61
61     </div>
62     <div class="pull-right"> 63
63       <a href=<?= base_url('authenticate/logout'); ?> class="btn btn-default btn-flat">Sign out</a> 64
64     </div>
65   </li>
66 </ul>
67 </li>
68 </ul>
69 </div>
70 </li>
71 </ul>
72 </div>
73 </li>
74 </ul>
75 </div>
76 </li>
77 </ul>
78 </div>
79 </li>
80 </ul>
81 </div>
82 </li>
83 </ul>
84 </div>
85 </li>
86 </ul>
87 </div>
88 </li>
89 </ul>
90 </li>
91 </ul>
92 </li>
93 </ul>

```

```

94 <li><a href=<?= base_url('
specimen/access');?>><i class='glyphicon glyphicon-chevron-right'></i>Sample 148
Access</a></li>
95     <li style="display:<?=(#$this->
session->userdata('logged_in'))[,
userTypeId'] == 1 ? 'none' : ''?>><a href=<?= base_url('specimen/logs');?>><i class='glyphicon glyphicon-chevron-right'></i>Sample Access Logs</a></li> 153
96     </ul> 154
97   </li> 155
98   <li style="display:<?=(#$this->session 156
->userdata('logged_in'))['userTypeId'] ==
1 ? 'none' : ''?>><a href=<?= base_url('reports');?>> 157
158 ><i class='glyphicon glyphicon-tasks'></i>Reports</span></a> 160
100   </li> 161
101 </ul> 162
102 </section> 163
103 </aside> 164
104
105 <div class="content-wrapper"> 165
106 <section class="content-header"> 166
107   <h1>
108     <?php echo $pageHeader; ?> 167
109     <small></small> 168
110   </h1> 169
111   <ol class="breadcrumb"> 170
112     <li><a href="#"><i class="fa fa- 171
dashboard"></i> <?php echo $pageTitle; 172
?></a></li> 173
113     <li class="active"><?php echo 174
$pageHeader; ?></li> 175
114   </ol> 176
115 </section> 177
116
117 <?php if( isset( $message ) ) : ?> 178
118 <div class="col-xs-offset-0 col-xs-12"> 179
119 <div class="alert alert-success alert- 180
dismissible"> 181
120   <button type="button" class="close" data- 182
dismiss="alert" aria-hidden="true"></ 183
button> 184
121   <h4><i class="icon fa fa-check"></i> <?php 185
echo $message; ?></h4> 186
122 </div> 187
123 </div> 188
124 <?php endif; ?> 189
125 <section class="content"> 190
126   <div class="row"> 191
127     <div class="col-xs-12"> 192
128       <div class="box"> 193
129         <div class="box-header"> 194
130           <h3 class="box-title"> 195
Specimen Samples</h3> 196
131           </div> 197
132           <div class="box-body"> 198
133             <table id="example1" class=" 199
table table-bordered table-hover"> 200
134               <thead> 201
135                 <tr> 202
136                   <th>Specimen Sample 203
Barcode</th> 204
137                   <th>Specimen Type</th> 205
138                   <th>Current Volume</th> 206
139               > 207
140                 </tr> 208
141               <tbody> 209
142                 <?php if( $samples != null 210
) : ?> 211
143                 <?php foreach( $samples as 212
$row ):> 213
144                   <tr style="color:<?=(#row 214
->current_volume <= 100 ? 'red' : ''?>> 215
<td> 216
145                     <a href=<?= 217

```

Listing 38: Specimen/logs.php

```
1 <!DOCTYPE html>
2 <html>
3 <head>
4   <meta charset="UTF-8">
5   <title>IMBB BSSMS | Dashboard</title>
6   <meta content='width=device-width, initial-scale=1, maximum-scale=1, user-scalable=no' name='viewport'>
7   <link href=<?php echo base_url("public_html13/vendor/bootstrap/css/bootstrap.css"); ?>" rel="stylesheet" type="text/css" />
8   <link href="https://maxcdn.bootstrapcdn.com/font-awesome/4.3.0/css/font-awesome.min.css" rel="stylesheet" type="text/css" />
9   <link href="https://code.ionicframework.com/ionicicons/2.0.1/css/ionicons.min.css" rel="stylesheet" type="text/css" />
```

```
10 <link href=<?php echo base_url("public_html  
11 /vendor/plugins/datatables/dataTables.  
12 bootstrap.css"); ?> rel="stylesheet"  
13 type="text/css" />  
14 <link href=<?php echo base_url("public_html  
15 /vendor/adminlte/css/AdminLTE.min.css");  
16 ?> rel="stylesheet" type="text/css" />  
17 <link href=<?php echo base_url("public_html  
18 /vendor/plugins/iCheck/square/blue.css");  
19 ?> rel="stylesheet" type="text/css" />  
20 <link href=<?php echo base_url("public_html  
21 /vendor/adminlte/css/skins/skin-blue.css"  
22 ); ?> rel="stylesheet" type="text/css"  
23 />  
24 <link href=<?php echo base_url("public_html  
25 /assets/css/system.css"); ?> rel="stylesheet"  
26 type="text/css" />  
27 <!--[if lt IE 9]>
```

```

16   <script src="https://oss.maxcdn.com/
17     html5shiv/3.7.2/html5shiv.min.js"></
18     script> 79
19   <script src="https://oss.maxcdn.com/respond/1.4.2/respond.min.js"></script>
20   <![endif]-->
21 </head> 81
22 <body class="skin-blue sidebar-mini">
23 <div class="wrapper">
24   <header class="main-header">
25     <a href="= base_url('dashboard')?&gt;" class
26       = "logo"&gt;
27       &lt;span class="logo-mini"&gt;&lt;b&gt;BSS&lt;/b&gt;MS&lt;/span&gt;82
28     &gt; 83
29     &lt;span class="logo-lg"&gt;&lt;b&gt;IMBB BSSMS&lt;/b&gt;&lt;/
26       span&gt; 84
30   &lt;/a&gt;
31   &lt;nav class="navbar navbar-static-top" role="navigation"&gt;
32     &lt;a href="#" class="sidebar-toggle" data-
33       toggle="offcanvas" role="button"&gt; 87
34       &lt;span class="sr-only"&gt;Toggle navigation
35       &lt;/span&gt;
36     &lt;/a&gt;
37     &lt;div class="navbar-custom-menu"&gt;
38       &lt;ul class="nav navbar-nav"&gt;
39         &lt;li class="dropdown user user-menu"&gt; 88
40           &lt;a href="#" class="dropdown-toggle"
41             data-toggle="dropdown"&gt;
42             &lt;img src="<?= base_url("public_html/vendor/adminlte/img/avatar.
43               png"); ?&gt;" class="user-image" alt="User
44               Image"/&gt; 91
45             &lt;span class="hidden-xs"&gt;&lt;?= $this-&gt;
46               session-&gt;userdata('logged_in')[ 'firstname' ]; ?&gt;&lt;/span&gt;
47             &lt;/a&gt;
48           &lt;ul class="dropdown-menu"&gt; 93
49             &lt;li class="user-header"&gt; 94
50               &lt;img src="<?= base_url("public_html/vendor/adminlte/img/avatar.
51                 png"); ?&gt;" class="img-circle" alt="User
52                 Image" /&gt; 95
53               &lt;p&gt;
54                 &lt;?= $this-&gt;session-&gt;userdata(
55                   'logged_in')[ 'fullname' ]; ?&gt;
56                 &lt;small style="color:#00c0ef;"&gt;
57                   &lt;?= $this-&gt;session-&gt;userdata('logged_in',
58                     )[ 'usertype' ]; ?&gt;&lt;/small&gt; 96
59               &lt;/p&gt;
60             &lt;/li&gt;
61             &lt;li class="user-footer"&gt;
62               &lt;div class="pull-left"&gt;
63                 &lt;a href="<?= base_url('
64                   dashboard'); ?&gt;" class="btn btn-default
65                   btn-flat"&gt;Dashboard&lt;/a&gt;
66                 &lt;/div&gt;
67                 &lt;div class="pull-right"&gt;
68                   &lt;a href="<?= base_url('
69                     authenticate/logout'); ?&gt;" class="btn btn-
70                     flat"&gt;Sign out&lt;/a&gt;
71                 &lt;/div&gt;
72               &lt;/li&gt;
73             &lt;/ul&gt;
74           &lt;/li&gt;
75         &lt;/ul&gt;
76       &lt;/div&gt;
77     &lt;/header&gt;
78   &lt;aside class="main-sidebar"&gt;
79     &lt;div class="content"&gt;
80       &lt;div class="user-panel"&gt;
81         &lt;div class="pull-left image"&gt;
82           &lt;img src="<?= base_url("public_html/
83             vendor/adminlte/img/avatar.png"); ?&gt;"&gt; 119
84             class="img-circle" alt="User Image" /&gt;
85         &lt;/div&gt;
86         &lt;div class="pull-left info"&gt;
87           &lt;p&gt;&lt;?= $this-&gt;session-&gt;userdata(
88             'logged_in')[ 'fullname' ]; ?&gt;&lt;/p&gt;
89           &lt;span class="glyphicon glyphicon-user"&gt;
90             &lt;?= $this-&gt;session-&gt;
91             userdata('logged_in')[ 'usertype' ]; ?&gt;&lt;/
92             span&gt;
93         &lt;/div&gt;
94       &lt;/div&gt;
95       &lt;ul class="sidebar-menu"&gt;
96         &lt;li class="header"&gt;&lt;?= $this-&gt;session-
97           userdata('logged_in')[ 'projectName' ];
98         &gt;&lt;/li&gt;
99         &lt;li&gt;
100           &lt;a href="#"&gt;&lt;i class="fa fa-angle-left pull-right"&gt;
101             &lt;/i&gt;&lt;/a&gt;
102             &lt;ul class="treeview-menu"&gt;
103               &lt;li style="display:&lt;?=($this-&gt;
104                 session-&gt;userdata('logged_in')[ 'usertypeId' ] == 1 ? 'none' : '')?&gt;"&gt;&lt;a href="<?= base_url('singleproject/edit')"; ?&gt;&gt;&lt;i class="glyphicon glyphicon-chevron-right"&gt;&lt;/i&gt;Update&lt;/a&gt;&lt;/li&gt;
105             &lt;/ul&gt;
106           &lt;/li&gt;
107           &lt;a href="#"&gt;&lt;i class="glyphicon glyphicon-
108             tasks"&gt;&lt;/i&gt; &lt;span&gt;Specimen&lt;/span&gt;
109             &lt;i class="fa fa-angle-left pull-right"&gt;
110               &lt;/i&gt;&lt;/a&gt;
111             &lt;ul class="treeview-menu"&gt;
112               &lt;li style="display:&lt;?=($this-&gt;
113                 session-&gt;userdata('logged_in')[ 'usertypeId' ] == 1 ? 'none' : '')?&gt;"&gt;&lt;a href="<?= base_url('specimen/create')"; ?&gt;&gt;&lt;i class="glyphicon glyphicon-chevron-right"&gt;&lt;/i&gt;New Sample&lt;/a&gt;&lt;/li&gt;
114               &lt;li&gt;&lt;a href="<?= base_url('specimen/index'); ?&gt;&gt;&lt;i class="glyphicon glyphicon-chevron-right"&gt;&lt;/i&gt;Sample List
115                 &lt;/a&gt;&lt;/li&gt;
116               &lt;/ul&gt;
117             &lt;/li&gt;
118             &lt;li class="active"&gt;
119               &lt;a href="#"&gt;&lt;i class="glyphicon glyphicon-
120                 tasks"&gt;&lt;/i&gt; &lt;span&gt;Access&lt;/span&gt;
121                 &lt;i class="fa fa-angle-left pull-right"&gt;
122                   &lt;/i&gt;&lt;/a&gt;
123             &lt;ul class="treeview-menu"&gt;
124               &lt;li&gt;&lt;a href="<?= base_url('specimen/access'); ?&gt;&gt;&lt;i class="glyphicon glyphicon-chevron-right"&gt;&lt;/i&gt;Sample
125                 Access&lt;/a&gt;&lt;/li&gt;
126               &lt;/ul&gt;
127             &lt;/li&gt;
128             &lt;li style="display:&lt;?=($this-&gt;session-
129               userdata('logged_in')[ 'usertypeId' ] ==
130                 1 ? 'none' : '')?&gt;"&gt;
131               &lt;a href="<?= base_url('reports'); ?&gt;&gt;&lt;i class="glyphicon glyphicon-tasks"&gt;&lt;/i&gt;
132                 &gt;&lt;span&gt;Reports&lt;/span&gt;&lt;/a&gt;
133             &lt;/li&gt;
134           &lt;/ul&gt;
135         &lt;/li&gt;
136       &lt;/ul&gt;
137     &lt;/div&gt;
138   &lt;/aside&gt;
139   &lt;div class="content-wrapper"&gt;
140     &lt;section class="content-header"&gt;
141       &lt;h1&gt;
142         &lt;?php echo $pageHeader; ?&gt;
143         &lt;small&gt;&lt;/small&gt;
144       &lt;/h1&gt;
145       &lt;ol class="breadcrumb"&gt;
146         &lt;li&gt;&lt;a href="#"&gt;&lt;i class="fa fa-
147           dashboard"&gt;&lt;/i&gt; &lt;?php echo $pageTitle;
148           ?&gt;&lt;/a&gt;&lt;/li&gt;
149         &lt;li class="active"&gt;&lt;?php echo
150           $pageHeader; ?&gt;&lt;/li&gt;
151       &lt;/ol&gt;
152     &lt;/section&gt;
153     &lt;?php if( isset( $message ) ) : ?&gt;
154     &lt;div class="alert alert-<?php echo $message
155       [ 'type' ]; ?&gt; alert-dismissible"&gt;
156       &lt;button type="button" class="close" data-
157         dismiss="alert" aria-hidden="true"&gt; &lt;/
158         button&gt;
159       &lt;h4&gt;&lt;i class="icon fa fa-<?php echo
160         $message[ 'icon' ]; ?&gt;"&gt;&lt;/i&gt; &lt;?php echo
161         $message[ 'text' ]; ?&gt;&lt;/h4&gt;
162     &lt;/div&gt;
163     &lt;?php endif; ?&gt;
164     &lt;section class="content"&gt;
165       &lt;div class="row"&gt;
166         &lt;div class="col-xs-12"&gt;
167           &lt;div class="box"&gt;
168             &lt;div class="box-header"&gt;
169               &lt;h3 class="box-title"&gt;Sample
170                 Access Logs&lt;/h3&gt;
171             &lt;/div&gt;
</pre

```

```

133         <div class="box-body"> 177
134             <table id="example1" class="table178
135                 table-bordered table-hover" data-order='179
136                     [[ 0, "desc" ]]>
137                         <thead> 180
138                             <tr> 181
139                                 <th>Date /Time</th> 183
140                                 <th>Sample</th> 184
141                                 <th>Amount Obtained</th> 185
142                                 <th>Test</th> 186
143                                 <th>User</th> 187
144                         </thead> 188
145                         <tbody> 189
146                             <?php if( $samples != null ) 190
147                             ?> 191
148                             <?php foreach($samples as $row 192
149                             ):?> 192
150                             <tr> 192
151                                 <td><?= $row->timestamp?></td> 193
152                                 <td><?= $row->barcode?></td> 193
153                                 <td><?= $row->amount?></td> 193
154                                 <td><?= $row->name?></td> 193
155                                 <?php if ( $this->session-> 194
156                         userdata('logged_in')[ 'projectId' ] == 195
157                         $row->pid ) : ?> 196
158                             <td><?= $row->firstname?> <?#97 <script src="<?php echo base_url("public_html/
159                             $row->lastname?></td> 197 vendor/plugins/jQuery/jQuery -2.1.4.min.js
160                             <?php else : ?> 197
161                             <td><?= $row->pname?></td> 198 <script src="<?php echo base_url("public_html/
162                             <?php endif;?> 198 vendor/bootstrap/js/bootstrap.min.js");
163                             </tr> 199 <script src="<?php echo base_url("public_html/
164                             <?php endforeach;?> 199 vendor/adminlte/js/app.min.js"); ?>" type="text/
165                             <?php else : ?> 200 <script src="<?php echo base_url("public_html/
166                             <tr> 200 vendor/plugins/datatables/jquery.
167                                 <td>no available data</td> 200 dataTables.min.js"); ?>" type="text/
168                                 <td></td> 200 javascript"></script>
169                                 <td></td> 201 <script src="<?php echo base_url("public_html/
170                                 <td></td> 201 vendor/plugins/datatables/dataTables.
171                                 <th>Date /Time</th> 201 bootstrap.min.js"); ?>" type="text/
172                                 <th>Sample</th> 202 <script type="text/javascript">
173                                 <th>Amount Obtained</th> 203 $(function () {
174                                 <th>Test</th> 204     $("#example1").dataTable();
175                                 <th>User</th> 205 });
176                         </tr>

```

Listing 39: Specimen/view.php

```

1 <!DOCTYPE html>
2 <html>
3 <head>
4     <meta charset="UTF-8">
5     <title>IMBB BSSMS | Dashboard</title>
6     <meta content="width=device-width, initial-
       scale=1, maximum-scale=1, user-scalable=
       no" name="viewport">
7     <link href="<?php echo base_url("public_html
       /vendor/bootstrap/css/bootstrap.css"); ?>" 29
       rel="stylesheet" type="text/css" />
8     <link href="https://maxcdn.bootstrapcdn.com/30
       font-awesome/4.3.0/css/font-awesome.min.
       css" rel="stylesheet" type="text/css" /> 31
9      <link href="https://code.ionicframework.com/32
       ionicons/2.0.1/css/ionicons.min.css" rel="33
       stylesheet" type="text/css" /> 33
10     <link href="<?php echo base_url("public_html
       /vendor/plugins/datatables/dataTables.
       bootstrap.css"); ?>" rel="stylesheet" 34
       type="text/css" />
11     <link href="<?php echo base_url("public_html
       /vendor/adminlte/css/AdminLTE.min.css");
       ?>" rel="stylesheet" type="text/css" /> 37
12     <link href="<?php echo base_url("public_html
       /vendor/plugins/iCheck/square/blue.css");
       ?>" rel="stylesheet" type="text/css" /> 38
13     <link href="<?php echo base_url("public.html39
       /vendor/adminlte/css/skins/skin-blue.css"40
       ); ?>" rel="stylesheet" type="text/css" 41
       />
14     <link href="<?php echo base_url("public.html
       /assets/css/system.css"); ?>" rel="42
       stylesheet" type="text/css" />
15     <!--[if lt IE 9]> 43
16     <script src="https://oss.maxcdn.com/
       html5shiv/3.7.2/html5shiv.min.js"></
       script>
17     <script src="https://oss.maxcdn.com/respond
       /1.4.2/respond.min.js"></script> 45
18     <![endif]-->
19 </head> 46
20 <body class="skin-blue sidebar-mini"> 47
21
22 <div class="wrapper">
23 <header class="main-header">
24     <a href="<?= base_url('dashboard'); ?>" class
       = "logo">
25         <span class="logo-mini"><b>BSS</b>MS</span
       >
26         <span class="logo-lg"><b>IMBB BSSMS</b></
       span>
27     </a>
28     <nav class="navbar navbar-static-top" role="
       navigation">
29         <a href="#" class="sidebar-toggle" data-
       toggle="offcanvas" role="button">
30             <span class="sr-only">Toggle navigation
31             </span>
32         </a>
33         <div class="navbar-custom-menu">
34             <ul class="nav navbar-nav">
35                 <li class="dropdown user user-menu">
36                     <a href="#" class="dropdown-toggle" data-
       toggle="dropdown">
37                         " class="user-image" alt="User
       Image"/>
38                         <span class="hidden-xs"><?= $this
       ->session->userdata('logged_in')[ 'first
       name' ]; ?></span>
39                     </a>
40                     <ul class="dropdown-menu">
41                         <li class="user-header">
42                             " class="img-circle" alt="User
       Image" />
43                             <p>
44                                 <?= $this->session->userdata(
       logged_in )[ 'fullname' ]; ?>
45                                 <small style="color:#00c0ef;">
46                                     <?= $this->session->userdata('logged_in
       ')[ 'usertype' ]; ?></small>
47                             </p>
48                         </li>
49                         <li class="user-footer">
50                             <div class="pull-left">

```

```

49           <a href=<?= base_url('
50             dashboard');?>" class="btn btn-default
51             btn-flat">Dashboard</a>
52           </div>
53           <div class="pull-right">
54             <a href=<?= base_url('
55               authenticate/logout');?>" class="btn btn-
56               default btn-flat">Sign out</a>
57           </div>
58           </li>
59         </ul>
60       </li>
61     </div>
62   </nav>
63 </header>
64 <aside class="main-sidebar">
65   <section class="sidebar">
66     <div class="user-panel">
67       <div class="pull-left image">
68         <img src=<?= base_url("public_html/
69           vendor/adminlte/img/avatar.png"); ?>
70           class="img-circle" alt="User Image" />
71       </div>
72       <div class="pull-left info">
73         <p><?= $this->session->userdata(
74           logged_in)['fullname']; ?></p>
75         <span class="glyphicon glyphicon-user"
76           ></span><span style="margin-left:5%; color:#00c0ef;"><?= $this->session->
77           userdata('logged_in')['usertype']; ?></
78           span>
79       </div>
80     </div>
81     <ul class="sidebar-menu">
82       <li class="header"><?= $this->session-
83         ->userdata('logged_in')['projectName']; ?>
84       <li>
85         <a href="#"><i class="glyphicon
86           glyphicon-tasks"></i> <span>Project </span>
87         <i class="fa fa-angle-left pull-right"></i>
88       </a>
89       <ul class="treeview-menu">
90         <li><a href=<?= base_url('
91           singleproject/index');?>"><i class="'
92             glyphicon glyphicon-chevron-right"></i>
93           About</a></li>
94           <li style="display:<?=(($this->
95             session->userdata('logged_in')['
96               usertypeId'] == 1 ? 'none' : '')?>"><a
97             href=<?= base_url('singleproject/edit')
98             ;?>"><i class="glyphicon glyphicon-
99             chevron-right"></i>Update</a></li>
100      </ul>
101    </li>
102  </ul>
103 </aside>
104 <a href=<?= base_url('reports');?>">
105   <i class='glyphicon glyphicon-tasks'></i>
106   <span>Reports</span></a>
107 </li>
108 </ul>
109 </section>
110 </div>
111 <div class="content-wrapper">
112   <section class="content-header">
113     <h1>
114       <?php echo $pageHeader; ?>
115       <small></small>
116     </h1>
117     <ol class="breadcrumb">
118       <li><a href="#"><i class="fa fa-
119         dashboard"></i> <?php echo $pageTitle;
120         ?></a></li>
121       <li class="active"><?php echo
122         $pageHeader; ?></li>
123     </ol>
124   </section>
125   <?php if( isset( $message ) ) : ?>
126   <div class="alert alert-?<?php echo $message
127     ['type']; ?> alert-dismissible">
128     <button type="button" class="close" data-
129       dismiss="alert" aria-hidden="true"> </
130       button>
131     <h4><i class="icon fa fa-?<?php echo
132       $message['icon']; ?>"></i> <?php echo
133       $message['text']; ?></h4>
134   </div>
135   </div>
136   <?php endif; ?>
137   <section class="content">
138     <div class="row">
139       <div class="col-xs-12">
140         <div class="box">
141           <div class="box-header with-border">
142             <h3 class="box-title">Specimen
143             Sample Information </h3>
144             </div>
145             <div class="box-body">
146               <table id="example1" class="table
147                 border">
148                 <thead>
149                   <tr>
150                     <th>Shared with Project </th>
151                     <th>Specimen Sample Barcode
152                   </tr>
153                 </thead>
154                 <tbody>
155                   <tr>
156                     <?php if ( $sharedProjects
157                     != null ) :?>
158                     <td><?php foreach(
159                       $sharedProjects as $row):?> <?=$row->
160                       pname?> <br/> <?php endforeach;?></td>
161                     <?php else:>
162                     <td></td>
163                     <?php endif;?>
164                     <td><?=$sampleInfo->barcode
165                   ></td>
166                   <td><?=$sampleInfo->
167                     collection_date?></td>
168                   <td><?=$sampleInfo->
169                     original_volume?></td>
170                   <td><?=$sampleInfo->
171                     current_volume?></td>
172                   <td><?=$sampleInfo->sname
173                 ></td>
174                 </tr>
175               </tbody>
176             </table>
177           </div>
178           <div class="box-footer" style="
179             display: <?=(($this->session->userdata(
180               'logged_in')['usertype'] == 'Project Head',
181               ? : 'none'))?>">
182             <div class="pull-right hidden-xs">
183               <a href=<?= base_url('specimen/
184                 edit/1/' . $sampleId);?>" class="btn btn-
185                 primary">Edit</a>
186             </div>
187             <div>
188               </div>
189             </div>
190           </div>
191         </div>
192       </div>
193     </div>
194   </div>
195   <div class="row">
196     <div class="col-xs-12">
197       <div class="box">

```

```

172      <div class="box-header with-border" 250
173          <h3 class="box-title">Source 251
174      Information</h3> 252
175          <div class="box-body"> 253
176              <table class="table table-bordered" 255
177          "> 256
178              <thead> 257
179                  <tr> 258
180                      <th>First Name</th> 259
181                      <th>Last Name</th> 260
182                      <th>Sex</th> 261
183                      <th>Date of Birth</th>
184                      <th>Hospital Name</th> 262
185                  </tr> 263
186              </thead> 264
187              <tbody> 265
188      $row):?> 266
189          <tr> 267
190              <td><?=$row->firstname?></td> 268
191          > 269
192              <td><?=$row->lastname?></td> 270
193              <td><?=$row->sex?></td> 271
194              <td><?=$row->birthdate?></td> 272
195          ?></td> 273
196          <td><?=$row->hospital_name 274
197      ?></td> 275
198          </tr> 276
199          <?php endforeach;?> 277
200      </tbody> 278
201      </table> 279
202      </div> 280
203      <div class="box-footer" style=" 280
204      display: <?=$this->session->userdata(' 281
205      logged_in') ['usertype'] == 'Project Head' 282
206      ? : 'none' )?>"> 283
207          <div class="pull-right hidden-xs" 283
208              <a href=<?= base_url('specimen 284
209          edit /2/'. $sampleId);?>" class="btn btn- 285
210          primary">Edit</a> 286
211          </div> 287
212      </div> 288
213      </div> 289
214      </div> 290
215      <div class="row"> 290
216          <div class="col-xs-12"> 291
217              <div class="box"> 291
218                  <div class="box-header with-border"> 292
219                      <h3 class="box-title">Test 292
220                  Information</h3> 293
221                      </div> 294
222                      <div class="box-body"> 295
223                          <table class="table table-bordered" 296
224          "> 296
225              <thead> 297
226                  <tr> 298
227                      <th>Test</th> 299
228                      <th>Amount</th> 300
229                      <th>Result</th> 301
230                      <th>Notes</th> 302
231                  </tr> 303
232              </thead> 303
233              <tbody> 304
234      $php if( $testInfo != null ) : 305
235          <?php foreach( $testInfo as $row 305
236      ):?> 306
237          <tr> 306
238              <td><?=$row->name?></td> 307
239              <td><?=$row->amount?></td> 307
240              <td><?=$row->result == 308
241              null ? '' : ( $row->result == 0 ? 308
242              negative : 'positive' )?></td> 309
243              <td><?=$row->notes?></td> 310
244          </tr> 311
245          <?php endforeach;?> 311
246          <?php else: ?> 312
247          <tr> 312
248              <td>no available data</td> 313
249              <td></td> 313
250              <td></td> 314
251              <td></td> 314
252          </tr> 315
253          <?php endif; ?> 315
254      </tbody> 316
255      </table> 317
256      <div class="box-footer" > 317
257          <div class="pull-right hidden-xs" 317
258              <a href=<?= base_url('specimen/ 317
259          primary">Edit</a> 317
260          </div> 317
261      </div> 317
262      <?php endif; ?> 317
263      </form> 317
264      </div> 317
265      </div> 317
266      <div class="row"> 317
267          <div class="col-xs-12"> 317
268              <div class="box"> 317
269                  <div class="box-header with-border"> 317
270                      <h3 class="box-title">Location 317
271                  Information</h3> 317
272                      </div> 317
273                      <div class="box-body"> 317
274                          <table class="table table-bordered" 317
275          "> 317
276              <thead> 317
277                  <tr> 317
278                      <th>Freezer</th> 317
279                      <th>Shelf</th> 317
280                      <th>Rack</th> 317
281                      <th>Rack Level</th> 317
282                      <th>Box</th> 317
283                      <th>Slot</th> 317
284                  </tr> 317
285              </thead> 317
286              <tbody> 317
287          <?php foreach( $locationInfo as 317
288      $row):?> 317
289          <tr> 317
290              <td><?=$row->fname?></td> 317
291              <td><?=$row->snumber?></td> 317
292              <td><?=$row->rnumber?></td> 317
293              <td><?=$row->lnumber?></td> 317
294              <td><?=$row->bnumber?></td> 317
295              <td><?=$row->row?><?=$row-> 317
296              column?></td> 317
297          </tr> 317
298          <?php endforeach;?> 317
299      </tbody> 317
300      </table> 317
301      <div class="box-footer" style=" 317
302      display: <?=$this->session->userdata(' 317
303      logged_in') ['usertype'] == 'Project Head' 317
304      ? : 'none' )?>"> 317
305          <div class="pull-right hidden-xs" 317
306              <a href=<?= base.url('specimen/ 317
307          edit /4/'. $sampleId);?>" class="btn btn- 317
308          primary">Edit</a> 317
309          </div> 317
310          </div> 317
311          </div> 317
312          <script src=<?php echo base.url("public_html/ 317
313          vendor/plugins/jQuery/jQuery -2.1.4.min.js" 317
314          ); ?>"></script> 317
315          <script src=<?php echo base.url("public_html/ 317
316          vendor/bootstrap/js/bootstrap.min.js"); ?>" type= 317
317          "text/javascript"></script> 317
318          <script src=<?php echo base.url("public.html/ 317
319          vendor/adminlte/js/app.min.js"); ?>" type= 317
320          "text/javascript"></script> 317
321          <script src=<?php echo base.url("public.html/ 317
322          vendor/plugins/datatables/jquery. 317
323          dataTables.min.js"); ?>" type="text/ 317
324          javascript"></script> 317
325          <script src=<?php echo base.url("public.html/ 317
326          vendor/plugins/dataTables/dataTables. 317
327          bootstrap.min.js"); ?>" type="text/ 317
328          javascript"></script> 317
329      </body> 317
330      </html> 317

```

Listing 40: SystemLogs/index.php

```

124             <tr>
125                 <td><?= $row->timestamp?></td> 157
126             <td><?= $row->firstname?> <?= 158
127             $row->lastname?></td>
128             <td><?= $row->log?></td> 158
129         </tr>
130     <?php endforeach;?>
131     <?php else: ?> 159 </footer>
132     <tr> 160
133         <td>no available<td> 161 </div>
134         <td></td> 162
135         <td></td> 163 <script src=<?php echo base_url("public_html/
136             </tr> 164 vendor/plugins/jQuery/jQuery -2.1.4.min.js
137             <?php endif; ?> 165 "); ?>></script>
138             <tfoot> 166 <script src=<?php echo base_url("public_html/
139             <tr> 167 vendor/bootstrap/js/bootstrap.min.js");
140                 <th>Timestamp</th> 168 >" type="text/javascript"></script>
141                 <th>User</th> 169 <script src=<?php echo base_url("public_html/
142                 <th>Log</th> 170 $(document).ready(function() {
143             </tr> 171     $('#example1').DataTable();
144             </tfoot> 172   });
145             </table> 173 </script>
146         </div> 174 </body>
147     </div> 175 </html>
148 </div>
149 </div>
150 </section>
151 </div>
152 <footer class="main-footer">
153     <div class="pull-right hidden-xs">
154         <strong>Copyright &copy; 2015 <a href="#"> 172 </script>
155             IMBB</a></strong> All rights reserved. 173 </script>
156     <img src=<?php echo base_url("public_html/175 </html>

```

Listing 41: User/create.php

```

1 <!DOCTYPE html>
2 <html>
3 <head>
4     <meta charset="UTF-8"> 33
5     <title>IMBB BSSMS | Dashboard</title> 34
6     <meta content="width=device-width, initial- 35
       scale=1, maximum-scale=1, user-scalable= 36
       no" name="viewport"> 37
7     <link href=<?php echo base_url("public_html/38
       /vendor/bootstrap/css/bootstrap.css"); ?> 38
       " rel="stylesheet" type="text/css" /> 39
8     <link href="https://maxcdn.bootstrapcdn.com/ 39
       font-awesome/4.3.0/css/font-awesome.min. 39
       css" rel="stylesheet" type="text/css" /> 40
9     <link href="https://code.ionicframework.com/ 40
       ionicons/2.0.1/css/ionicons.min.css" rel=40
       "stylesheet" type="text/css" /> 41
10    <link href=<?php echo base_url("public_html/42
       /vendor/plugins/datatables/dataTables. 42
       bootstrap.css"); ?>" rel="stylesheet" 43
       type="text/css" /> 43
11    <link href=<?php echo base_url("public_html/44
       /vendor/adminlte/css/AdminLTE.min.css"); 44
       ?>" rel="stylesheet" type="text/css" /> 44
12    <link href=<?php echo base_url("public_html/45
       /vendor/plugins/iCheck/square/blue.css"); 45
       ?>" rel="stylesheet" type="text/css" /> 45
13    <link href=<?php echo base_url("public_html/46
       /vendor/adminlte/css/skins/skin-blue.css" 46
       ); ?>" rel="stylesheet" type="text/css" 47
       /> 47
14    <link href=<?php echo base_url("public_html/48
       /assets/css/system.css"); ?>" rel=" 50
       stylesheet" type="text/css" /> 50
15    <!--[if lt IE 9]> 51
16        <script src="https://oss.maxcdn.com/ 51
           html5shiv/3.7.2/html5shiv.min.js"></ 52
           script> 52
17        <script src="https://oss.maxcdn.com/respond/ 53
           /1.4.2/respond.min.js"></script> 53
18    <![endif]--> 55
19 </head> 56
20 <body class="skin-blue sidebar-mini"> 57
21 <div class="wrapper"> 58
22 <header class="main-header"> 59
23     <a href=<?= base_url('dashboard');?>" class=60
       = logo"> 62
24         <!-- mini logo for sidebar mini 50x50 63
           pixels --> 64
25         <span class="logo-mini"><b>BSS</b>MS</span> 64
26         > 65
27         <!-- logo for regular state and mobile 66
           devices --> 67
28         <span class="logo-lg"><b>IMBB BSSMS</b></ 67
           span> 68
29     </a> 69
30     <nav class="navbar navbar-static-top" role=" 70
       navigation">

```

```

31         <a href="#" class="sidebar-toggle" data- 31
           toggle="offcanvas" role="button"> 32
               <span class="sr-only">Toggle navigation 32
               </span> 33
           </a> 33
           <div class="navbar-custom-menu"> 34
               <ul class="nav navbar-nav"> 34
                   <li class="dropdown user user-menu"> 35
                       <a href="#" class="dropdown-toggle" 35
                           data-toggle="dropdown"> 36
                           <img src=<?= base_url(" 36
                           public_html/vendor/adminlte/img/avatar. 36
                           png"); ?>" class="user-image" alt="User 37
                           Image"/> 37
                           <span class="hidden-xs"><?= $this 38
                           ->session->userdata('logged_in')[ ' 38
                           firstname']; ?></span> 39
                       </a> 39
                   <ul class="dropdown-menu"> 40
                       <li class="user-header"> 40
                           <img src=<?= base_url(" 40
                           public_html/vendor/adminlte/img/avatar. 40
                           png"); ?>" class="img-circle" alt="User 41
                           Image" /> 41
                           <p><?= $this->session->userdata(' 41
                           logged_in')[ 'fullname']; ?> 42
                           <small style="color:#00c0ef;" 42
                           ><?= ($this->session->userdata('logged_in 42
                           ')[ 'is_sysadmin'] ? 'System Administrator 42
                           ' : '') ?></small> 43
                           </p> 43
                       </li> 44
                   </ul> 44
               </li> 45
           </ul> 45
           <li class="user-footer"> 46
               <div class="pull-right"> 46
                   <a href=<?= base_url(' 46
                     authenticate/logout');?>" class="btn btn- 46
                     default btn-flat">Sign out</a> 46
               </div> 47
           </li> 47
           </ul> 48
       </div> 48
   </header> 49
   <aside class="main-sidebar"> 50
       <section class="sidebar"> 50
           <div class="user-panel"> 51
               <div class="pull-left image"> 51
                   <img src=<?= base_url(" 51
                     public_html/vendor/adminlte/img/avatar.png"); ?>" 51
                     class="img-circle" alt="User Image" /> 52
               </div> 52
               <div class="pull-left info"> 52
                   <p><?= $this->session->userdata(' 52

```

```

    logged_in ') [ 'fullname' ]; ?></p>          133
71   </div>
72   </div>
73     <ul class="sidebar-menu">
74       <li class="header"></li>          134
75       <li class="treeview">
76         <a href="#"><i class='glyphicon glyphicon-tasks'></i> <span>Projects </span></a>          136
77           <ul class="treeview-menu">
78             <li><a href=?><?= base_url('
79               projects/create');?>><i class='glyphicon glyphicon-chevron-right'></i>New Project<138
80             </a></li>          139
81             <li><a href=?><?= base_url('
82               projects');?>><i class='glyphicon glyphicon-chevron-right'></i>Project List<140
83             </a></li>          141
84           </ul>
85           <li class="active">
86             <a href="#"><i class='glyphicon glyphicon-tasks'></i></a> <span>Users </span></a></li>          144
87             <ul class="treeview-menu">          145
88               <li class="active"><a href="?
89                 <?= base_url('users/create');?>><i class='glyphicon glyphicon-chevron-right'></i>
90                 New User</a></li>          147
91               <li><a href=?><?= base_url('
92                 users');?>><i class='glyphicon glyphicon-chevron-right'></i>User List </a></li>          148
93             </ul>
94           </li>          150
95         <li><a href=?><?= base_url('
96           systemlogs');?>><i class='glyphicon glyphicon-tasks'></i> <span>Audit Trail </span></a>          152
97         </li>
98       </ul>
99     </li>
100   </section>
101 </aside>
102 </div>
103 <div class="content-wrapper">
104   <section class="content-header">
105     <h1>
106       <?php echo $pageHeader; ?>          159
107       <small></small>          160
108     </h1>
109     <ol class="breadcrumb">
110       <li><a href="#"><i class="fa fa-dashboar
111         rd"></i> <?php echo $pageTitle;
112         ?></a></li>          164
113       <li class="active"><?php echo
114         $pageHeader; ?></li>          165
115     </ol>
116   </section>
117   <?php if( iset( $message ) ) : ?>          166
118   <div class="col-xs-offset-0 col-xs-12">
119     <div class="alert alert-?><?($message['type
120       '])?> alert-dismissible">
121       <button type="button" class="close" data-
122         dismiss="alert" aria-hidden="true"> </
123         button>
124       <h4><i class="icon fa fa-<?($message['
125         icon'])?>></i> <?php echo $message['
126         text']'; ?></h4>          173
127     </div>
128   </div>
129   <?php endif; ?>          174
130   <?php
131     <section class="content">
132       <div class="row">
133         <div class="col-md-12">
134           <div class="box box-primary">
135             <div class="box-header">
136               <h3 class="box-title">User 182
137                 Information </h3>
138               </div>
139               <?php echo form_open('users/
140                 insert'); ?>
141                 <div class="box-body">
142                   <div class="col-sm-6 invoice-184
143                     -col">
144                     <div class="form-group">
145                       <label for="username"> 187
146                         Username <i class="glyphicon glyphicon-
147                           asterisk" style="color:red"></i></label> 188
148                         <input type="text" class="form-control" id="username" name="username" placeholder="Enter Username" required="required"> 189
149                         </div>
150                         <div class="form-group"> 190
151                           <label for="password"> 191
152                             Password <i class="glyphicon glyphicon-
153                               asterisk" style="color:red"></i></label> 194
154                         </div>
155           </div>
156         </div>
157       </div>
158     </section>
159     <div class="modal fade" id="userModal" tabindex="-1" role="dialog" aria-labelledby="myModalLabel" aria-
160       hidden="true">
161       <div class="modal-dialog">
162         <div class="modal-content">
163           <div class="modal-header">
164             <button type="button" class="close" data-
165               dismiss="modal" aria-hidden="true">&times;</
166               span></button>
167             <h4 class="modal-title">Are 184
168             you sure you want to add new user? </h4>
169           </div>
170           <div class="modal-footer">
171             <button type="submit" class="btn btn-primary">Add User</button>
172             <button type="button" class="btn btn-default" data-dismiss="modal">Cancel</button>
173           </div>
174         </div>
175       </div>
176     </div>
177   </div>
178 </?php
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195

```

```

196 </div>
197 <footer class="main-footer">
198   <div class="pull-right hidden-xs">
199     <strong>Copyright &copy; 2015 <a href="#">
200       IMBB</a></strong> All rights reserved.
201   </div>
202   <img src=<?php echo base_url("public_html/
203     vendor/img/IMBB.png"); ?>" width="35px"
204   ></img>
205   <img src=<?php echo base_url("public_html/
206     vendor/img/UPM.Logo.png"); ?>" width="35
207   px"></img>
208   <img src=<?php echo base_url("public_html/
209     vendor/img/NIH.Logo.png"); ?>" width="35
210   px"></img>
211 </script src=<?php echo base_url("public_html/
212     vendor/plugins/datatables/jquery.
213     dataTables.min.js"); ?>" type="text/
214     javascript"></script>
215 </body>
216 </html>

```

Listing 42: User/index.php

```

1 <!DOCTYPE html>
2 <html>
3 <head>
4   <meta charset="UTF-8">
5   <title>IMBB BSSMS | Dashboard</title>
6   <meta content='width=device-width, initial-
    scale=1, maximum-scale=1, user-scalable=
      no' name='viewport'>
7   <link href=<?php echo base_url("public_html
      /vendor/bootstrap/css/bootstrap.css"); ?>
8     " rel="stylesheet" type="text/css" />
9   <link href="https://maxcdn.bootstrapcdn.com/
10    font-awesome/4.3.0/css/font-awesome.min.
11    css" rel="stylesheet" type="text/css" />
12   <link href="https://code.ionicframework.com/
13    ionicons/2.0.1/css/ionicons.min.css" rel=
14      50
15    "stylesheet" type="text/css" />
16   <link href=<?php echo base_url("public_html
17    /vendor/plugins/datatables/dataTables.
18    bootstrap.css"); ?> rel="stylesheet"
19      54
20    type="text/css" />
21   <link href=<?php echo base_url("public_html
22    /vendor/adminlte/css/AdminLTE.min.css");
23    ?>" rel="stylesheet" type="text/css" />
24   <link href=<?php echo base_url("public_html
25    /assets/css/system.css"); ?>" rel="
26    stylesheet" type="text/css" />
27   <!--[if lt IE 9]>
28   <script src="https://oss.maxcdn.com/
29    html5shiv/3.7.2/html5shiv.min.js"></script>
30   <!--[endif]-->
31 </head>
32 <body class="skin-blue sidebar-mini">
33 <div class="wrapper">
34 <header class="main-header">
35   <a href=<?= base_url('dashboard'); ?>" class
36     = "logo">
37     <span class="logo-mini"><b>BSS</b>MS</span
38     >
39     <span class="logo-lg"><b>IMBB BSSMS</b></
40     span>
41   </a>
42   <nav class="navbar navbar-static-top" role="
43     navigation">
44     <a href="#" class="sidebar-toggle" data-
45       toggle="offcanvas" role="button">
46       <span class="sr-only">Toggle navigation
47       </span>
48     </a>
49     <div class="navbar-custom-menu">
50       <ul class="nav navbar-nav">
51         <li class="dropdown user user-menu">
52           <a href="#" class="dropdown-toggle"
53             data-toggle="dropdown">
54               <img src=<?= base_url(
55                 public_html/vendor/adminlte/img/avatar.
56                 png"); ?>" class="user-image" alt="User
57                 Image"/>
58               <span class="hidden-xs"><?= $this
59                 ->session->userdata('logged_in')['
60                   firstname']; ?></span>
61               </a>
62             <ul class="dropdown-menu">
63               <li class="user-header">
64                 <img src=<?= base_url(
65

```

```

    glyphicon-tasks'></i> <span>Audit Trail</span>
89     </a>
90     </li>
91   </ul>
92 </section>
93 <div class="content-wrapper">
94   <section class="content-header">
95     <h1>
96       <?php echo $pageHeader; ?>
97       <small></small>
98     </h1>
99     <ol class="breadcrumb">
100       <li><a href="#"><i class="fa fa-
101         dashboard"></i> <?php echo $pageTitle;
102       ?></a></li>
103       <li class="active"><?php echo
104         $pageHeader; ?></li>
105     </ol>
106   <section class="content">
107     <div class="row">
108       <div class="col-xs-12">
109         <div class="box">
110           <div class="box-header">
111             <h3 class="box-title">Users </h3>
112             <div class="box-body">
113               <table id="example1" class="table-bordered table-hover">
114                 <thead>
115                   <tr>
116                     <th>Active</th>
117                     <th>Username</th>
118                     <th>First Name</th>
119                     <th>Last Name</th>
120                     <th>Email Address</th>
121                     <th>Sex</th>
122                     <th>Date of Birth</th>
123                 </thead>
124                 <tbody>
125                   <?php if( $users != null ) : ?>
126                     <?php foreach($users as $row) : ?>
127                       <tr>
128                         <td><a href="#">?= ($row->
129                           is_active == 1 ? base_url('users/
130                             deactivate/'.$row->id) : base_url('users/
131                             activate/'.$row->id) )?>" class="btn btn-
132                             =1 ? 'glyphicon glyphicon-ok' :
133                             glyphicon glyphicon-remove'?>" style="
134                           <?= ( $row->is_active == '0' ? 'color:red' :
135                           ' : ' )?>"></i></a></td>
136                         <td><?= $row->username?></td>
137                         <td><?= $row->firstname?></td>
138                         >
139                         <td><?= $row->lastname?></td>
140                         <td><?= $row->email?></td>
141                         <td><?= $row->sex?></td>
142                         <td><?= $row->birthdate?></td>
143                         >
144                         </tr>
145                     <?php endforeach; ?>
146                     <?php else: ?>
147                     <tr>
148                       <td>no available </td>
149                     </tr>
150                   <?php endif; ?>
151                 </tbody>
152               <tfoot>
153                 <tr>
154                   <th>Active</th>
155                   <th>Username</th>
156                   <th>First Name</th>
157                   <th>Last Name</th>
158                   <th>Email Address</th>
159                   <th>Sex</th>
160                   <th>Date of Birth</th>
161                 </tr>
162               </tfoot>
163             </div>
164           </div>
165         </div>
166       </div>
167     </div>
168   <footer class="main-footer">
169     <div class="pull-right hidden-xs">
170       <strong>Copyright &copy; 2015 <a href="#">
171         IMBB</a>.</strong> All rights reserved.
172     </div>
173     " width="35px"
175     ></img>
176     " width="35
178     px"></img>
179     " width="35
181     px"></img>
182     <script src="<?php echo base_url("public_html/
183       vendor/plugins/datatables/jquery.
184       dataTables.min.js"); ?>" type="text/
185       javascript"></script>
186     <script src="<?php echo base_url("public_html/
187       vendor/bootstrap/js/bootstrap.min.js");
188       ?>" type="text/javascript"></script>
189   </div>
190 </html>

```

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